



25 Cents

MOTOR
BOATING

Sept 1920 pub.
July 26, 1920.

Serial no. needed.

RB

Standardization Means a Less Costly Boat for You

WHEN considering the merits of a particular motor boat, too great emphasis cannot be laid upon past performance.

ELCO — which in the war proved its superiority of construction and design to the British Admiralty by the manner in which the fleet of 722 M. L.'s performed, has proved the success of Standardization.

After all, Standardization is simply intelligent production in quantity. We are able to cut the price of the ELCO Cruisette and Cruiser very close owing to our ability to produce a great many of these sturdy boats in a short time.

The ELCO reputation for seaworthiness, perfection of design and craftsmanship goes with every boat and is your protection against making a mistake in buying.

THE ELCO WORKS

Main Office and Works
201 AVENUE A BAYONNE, N. J.
New York Office, 13 Pine Street

32 FOOT
ELCO CRUISETTE

Elco
MOTOR BOATS

ELCO STANDARDIZED MODELS

32 Ft. CRUISETTE — Open Model, 38 HP Engine—	Speed 12 miles guaranteed.....	\$2,450
32 Ft. CRUISETTE — Cabin Model, 38 HP Engine—	Speed 12 miles guaranteed.....	\$3,450
30 Ft. ELCO EXPRESS — Speed 22 miles guaranteed.....		\$5,500
35 Ft. ELCO EXPRESS — Speed 26 miles guaranteed.....		\$7,000
50 Ft. ELCO CRUISER — 75 HP Standard Engine—	Speed 15 miles guaranteed.....	\$16,500

Send for brochure: "Hounding the Hun from the Seas"



THE STANDARD ENGINE for the maximum powered boat.

This new triumph is a constant full-load engine turning 550 to 600 R.P.M., giving maintained engine speeds up to 600 R.P.M. under endless constant full-load service. It is standardized equipment for such standardized boats as the Elco express cruisers and the Mathis semi-house boats.

All the features so wished for in the really high speed cruiser and fast shallow draft boat are realized together; safety, power, speed, economy, noiselessness, cleanliness, comfort. Demands for this new type engine are ahead of production.

Write us your boat conditions for recommendations on maximum power.

Back of the STANDARD guarantee is the

STANDARD MOTOR CONSTRUCTION COMPANY

178 Whiton Street

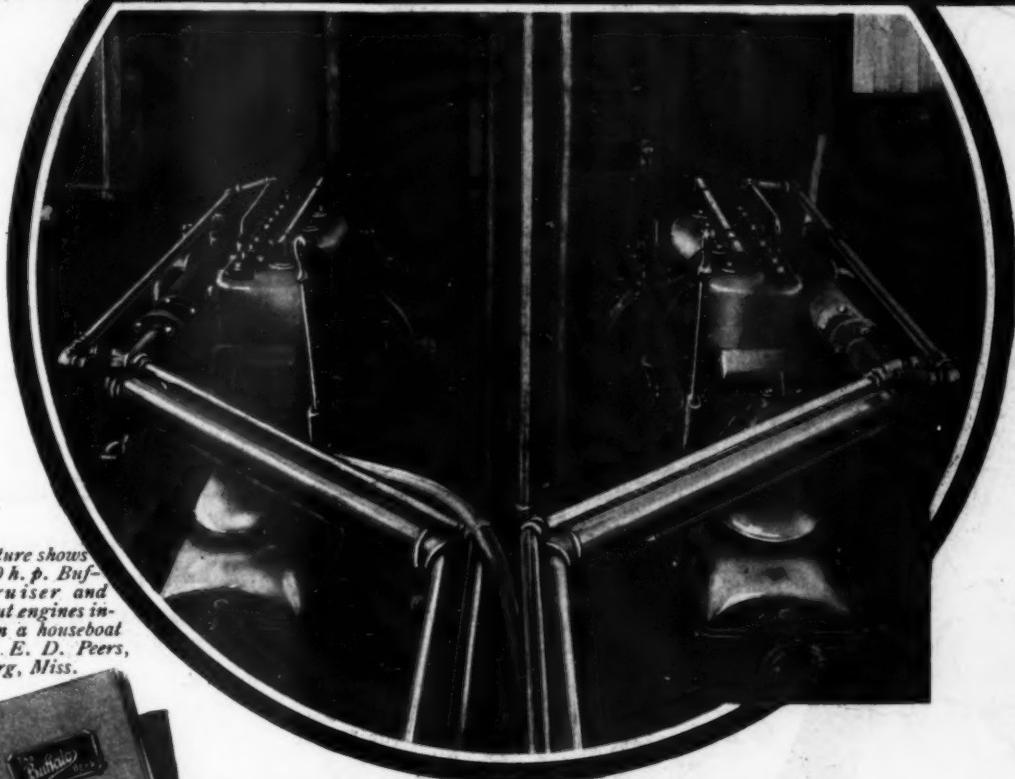
Jersey City, N. J.

JULY, 1920

MOTOR BOATING

Buffalo

"The Engine Of Constant Service"



This picture shows
two 40-60 h. p. Buf-
falo Cruiser and
Runabout engines in-
stalled in a houseboat
built by E. D. Peers,
Vicksburg, Miss.



Experience Has Taught —

EXPERIENCE has taught thousands of boat owners that reliability is cheap at any price. That is the quality on which the success of Buffalo Engines was founded — they are always reliable.

Buffalo engines are built in sizes from 3 to 150 h. p. for powering yachts, cruisers, runabouts, houseboats and workboats of all kinds.

The Buffalo Book which tells the whole story will be sent to you for the asking

BUFFALO GASOLENE MOTOR CO.

1274-1276 Niagara Street, Buffalo, N. Y.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating

Send for Your Copy!



**Columbian
Bronze
Propellers**

UNITED STATES SHIPPING BOARD
RECRUITING SERVICE
MARINE ENGINEERING FREE SCHOOL
PHILADELPHIA BOURSE
Philadelphia, Pa., July 17th, 1919

Columbian Brass Foundry
Freeport, Long Island

Gentlemen: Attention of Mr. Louis Hall, Pres.

You will be interested in knowing that I am using your little publication "Propellers in a Nut Shell" as a text book on propellers in the Marine Engineering School, Philadelphia branch, operating under direction of the United States Shipping Board.

Your 1919 edition is one of the most practical works on propellers that I have ever seen, it is comprehensive and with its accurately compiled speed tables and other propeller data, makes this book valuable to the engineer.

I wish to thank you for the books sent me for distribution to the students in the Marine Engineering School, and would say that each graduating student will receive a copy of your "Propellers in a Nut Shell."

Yours very truly,
MARINE ENGINEERING FREE SCHOOL

By *W.L.Hallman*
Instructor Internal
Combustion Engines.

WSC/PM

COLUMBIAN BRONZE CORPORATION
522 FIFTH AVENUE, at 44th Street New York Local Salesroom: 44 Third Avenue NEW YORK CITY



"ELIZABETH C." of Greenport, N. Y. A 16 ton Auxiliary Schooner owned by Capt. S. B. Bushnell. Carrying a cargo of 200 bushels of potatoes. Mainpower plant four cylinder 40 H. P. Frisbie engine equipt with a Paragon Reverse Gear. In service seven years.

NO MATTER how strenuous the service, the Paragon Reverse Gear does the work required of it quietly, continuously and efficiently.

Here is a boat which has been in active commission for seven years and in all those years the Paragon Reverse Gear has given that consistent service which Paragon users logically assume they are entitled to.

What the Paragon Reverse Gear is doing in the "ELIZABETH C." it can do in your boat — insist that your next engine be Paragon equipt.

PARAGON GEAR WORKS
TAUNTON, MASS., U. S. A.

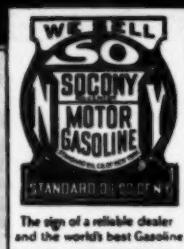
PARAGON REVERSE GEARS

© 1920, Rex W. Wadman, Inc.



SOCONY is the standard of quality gasoline. It is the logical fuel for the better grades of motors—it makes possible those splendid performances for which they were designed.

STANDARD OIL COMPANY OF NEW YORK



The sign of a reliable dealer
and the world's best Gasoline

SOCONY MOTOR GASOLINE

Balsa Buoyants for Water Sports



THILLING surf coasting on a gaily painted BALSINA or on a speedy BALSAWAIAN SURF BOARD, BALSAPLANING behind a fast-moving motor boat, lazy contentment basking in quiet water in a comfortable BALSA CHAIR FLOAT—these are the pleasures which BALSA BUOYANTS bring to summer days of recreation along the coast.



BALSA is the lightest of woods, lighter and more buoyant even than cork. In the BALSINAS, surf boards shaped like a fish, the Balsa is covered with brilliantly decorated canvas. The BALSAWAIAN SURF BOARD, patterned after one of the Island types, is even speedier and develops correspondingly greater skill in handling. In the BALSA CHAIR FLOAT, comfortable as a well-balanced chair, a canvas seat suspended from the "horsehoe" of Balsa. With the great



buoyancy of all Balsa products, it is especially safe for inexperienced swimmers. BALSINAS and CHAIR FLOATS are also made in a smaller size for the "kiddies". The A B C FIVE-PERSON LIFE RAFT, particularly adapted for use on yachts, is made in two types. The type with drop platform meets inspection requirements, replacing life preservers. The flush platform type, with strong netting stretched inside the ring, is for general use, especially for the safety which as a swimming float it adds to deep-water bathing.

American Balsa Company Inc.

50 East 42nd Street, New York

Obtainable from your Sporting Goods Dealer

Circular on Request



"Good Will" 54-Foot Great Lakes Express Cruiser owned by Mr. Keith Spalding, Chicago, and used at his winter home San Pedro, California. Designed and built by the Great Lakes Boat Building Corporation. Equipt with a pair of six cylinder Model M-6 Van Blerck engines. Speed 3 to 25 M. P. H.

GOOD WILL" is used for fishing and also for cruising. Her owner insisted on a minimum speed of 3 M. P. H. and a maximum speed of 25 M. P. H. plus perfect control between those two limits.

Previously such control has not been possible on Express Cruisers, they could be operated at high speeds successfully but not at low speeds.

But the new Van Blerck engines have remedied this condition. With the new Van Blerck system of carburetion and manifolding it is possible to go from full ahead to dead slow—the whole arc of the throttle—instantly and have the engine answer perfectly. No choking or back firing, just an instantaneous answer to the throttle command.

A tremendous asset to a fast boat, this ability to maneuver at slow speed, to operate at trolling speeds when fishing, to have a power plant which will not stall at the critical moment.

And Van Blerck engines are the only high speed engines which have this dependable control at all speeds

VAN BLERCK MOTOR COMPANY
Also Makers of High-Duty Commercial Works
OFFICE AND WORKS AT MONROE, MICHIGAN

Contents July 1920



VOL. XXVI, No. 1

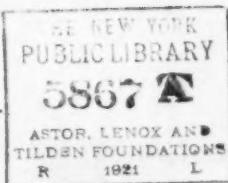
The American Boats Are Ready for the World's Championship	9-11
Sea Sledding in France	12-13
How Much Do Marine Engines Cost?	14-15
Oriana II	16
Miss Liberty II, A Great Lakes Product	17
Martha H, A Sterling-Powered Cruiser	17
The Mississippi Valley Regatta	18
Advent of Motors in Far East	21-22
From New England to the Chesapeake	23-24
Luders Produces a Stock 60-Footer	25
Chart No. 9—Chesapeake Bay—Part I	26
Eclipse, a Hand 40-Foot Express Cruiser	27-31
Small Motor Boats, Their Care, Construction and Equipment	32-35
Prize Question No. 1: How to Determine the Value of a Second-Hand Boat	32-33
Prize Question No. 2: What to Do with the Exhaust	33-34
Prize Question No. 3: To Refinish a Worn Bearing	35
Take a Surf Board with You on Your Cruise	36
Friendly Frisbie Family	37
The Way We Would Do It	38-39
New Things for the Motor Boatman	40
Hall-Scott Production	41
Yard and Shop	42

The motor boat race to Bermuda is off for this year. At a recent meeting of the Race Committee of the Columbia Yacht Club it was decided to postpone the race until June 25, 1921. The trophies offered by the Royal Bermuda Yacht Club and the Columbia Yacht Club for this year's race will hold over until next year. While four entries had been received for the race to Bermuda yet three of the boats were still in such a state of unpreparedness that the Race Committee, consisting of Messrs. N. E. Boomhower, C. G. Amory, C. S. Baeder, C. H. Moore, and C. F. Chapman (Chairman), ruled that the boats were unfit to go to sea in and rather than attempt a race between such craft the Committee decided upon a postponement. Vincent Astor's 110-foot motor yacht Christina was the only entry passed by the judges as fit for the 700-mile ocean run to Bermuda. Strikes in the shipyards and poor fitting-out weather were given as other contributing causes which prevented several owners desirous of making the race from entering.

A good entry for the 1921 race is assured. Twelve owners of boats either built or building, who were unable to enter in 1920 have promised the Committee that they would enter in 1921 if a race was scheduled. Vincent Astor has already assured the Committee that he would enter his new motor yacht now building which will be one of the largest motor yachts afloat.

MoToR BOATING 119 West 40th St., New York, N. Y. William Randolph Hearst, President; Joseph A. Moore, Vice-President and Treasurer; Ray Long, Vice-President; W. G. Langdon, Secretary. Copyright, 1920, by International Magazine Co. Telephone Bryant 6000. Western Office: Hearst Building, Chicago, Ill. Published monthly by International Magazine Co. Trade Mark registered.

Subscription price, United States and Canada, \$3.00; Foreign, \$4.00. Single copy, 25 cents.



"NORMA"

PRECISION BALL BEARINGS

(PATENTED)

It is easy to claim precision. It is another matter to maintain it, in quantity production. That "NORMA" Precision is a fact is demonstrated by the daily performance of hundreds of thousands of high-grade magnetos and lighting generators in which "NORMA" Bearings are standard. It is this sustained precision which explains "NORMA" silence and serviceability at high speeds.

See that your electrical apparatus is "NORMA" equipped

THE NORMA COMPANY OF AMERICA

Anable Avenue
Long Island City
New York



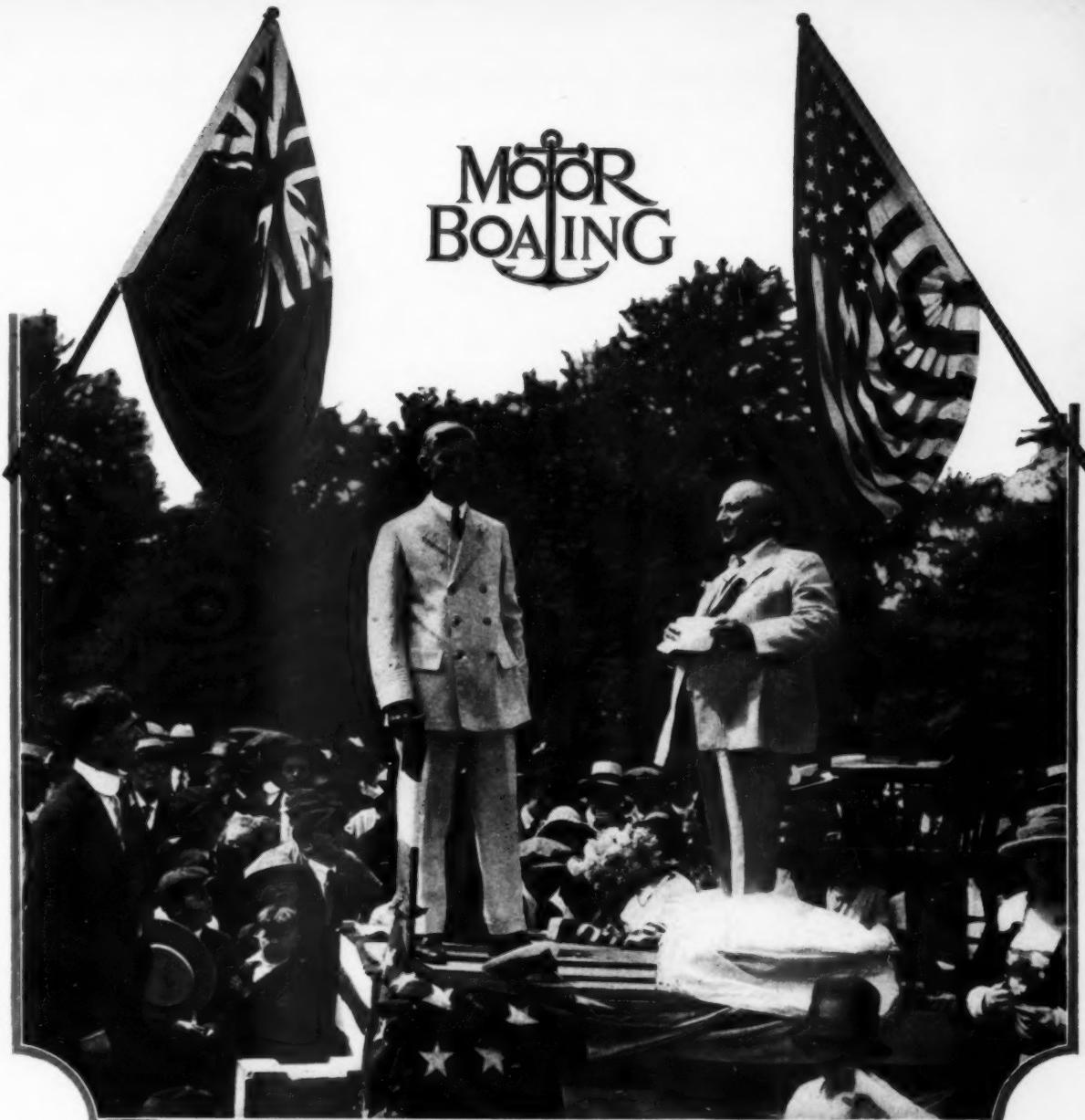
Ball, Roller, Thrust and Combination Bearings

GREAT LAKES CRAFT

THE utmost in cruising luxury and safety is presented in the new series Great Lakes Standardized Express Cruiser. Amply powered for a turn of speed of twenty-five miles an hour by twin screw power plants, luxuriously appointed in every detail, this fifty-four footer ranks as America's smartest craft.

Your inquiry is solicited.

GREAT LAKES BOAT BUILDING CORPORATION
Milwaukee, Wisconsin
Largest Builders of Express Cruisers in America



**MOOR
BOATING**

On the occasion of the launching of the two American challengers for the British International Trophy at Algonac, Mich., June 6, 1920. The central figure is Garfield A. Wood, owner of Miss America and Miss Detroit V. At the right is Commodore A. A. Schantz of Detroit

The American Boats Are Ready for the World's Championship

Miss America, Whip-po'-Will, Jr., and Miss Detroit V Selected as the Team to Race in England Next Month—Greatest Confidence Expressed that the American Boats Will Win

By Charles F. Chapman

Photographs by M. Rosenfeld

THE American team is ready and waiting. Whip-po'-Will, Jr., Miss America, and Miss Detroit V are the boats chosen to prove to the world that America is supreme in motor boat racing. Teams of boats representing England, France, and perhaps Spain will question America's right to the world's championship. We know the contests will be close, but having seen the American challengers run in their trials on this side of the Atlantic, we have no fear as to the final result abroad.

Miss America and Miss Detroit V of the American team are new craft specially built for these important races.

Whip-po'-Will, Jr., is the same hull which made the world's record of better than 70 miles an hour at Lake George in 1917, which record still stands, but with a new and much more powerful power plant installed. Miss America and Miss Detroit V are owned by G. A. Wood, of Detroit, Mich., and Whip-po'-Will, Jr., is the property of Commodore Albert L. Judson, of New York City. Commodore Judson is the president and Mr. Wood a vice-president of the American Power Boat Association.

The races are scheduled for August 10, and the days following until the team representing one country has won two



Miss Detroit V, the 38-foot American challenger, under way

races. The events will take place at Cowes, England, on semi-protected waters near the Isle of Wight. The trophy is the one formerly known as the Harmsworth Trophy, but now called the British International Trophy, and represents the motor boat championship of the world. It has been held by the British since 1912, their boat, Maple Leaf IV, having won it at Huntington, Long Island, by defeating the American boats, Baby Reliance and Ankle Deep, both of which had mishaps after America had won the first event.

In the planning of the boats to be sent abroad for this year's races a great deal of attention has been given to seaworthiness and ability to run in a rough sea as well as to extreme speed. Most of the speed races in this country during the last few years have been held on protected waters and inland waters, where very little rough water has been encountered. This condition has tended to develop a small craft, full of engine, which could go very fast on water as smooth as the mill pond, but as soon as the slightest chop developed it was all off. The boats had to slow down to 30

or 40 miles an hour in order to stay on top of the water and just jog around the course.

There is no doubt but that the American 20-footers are

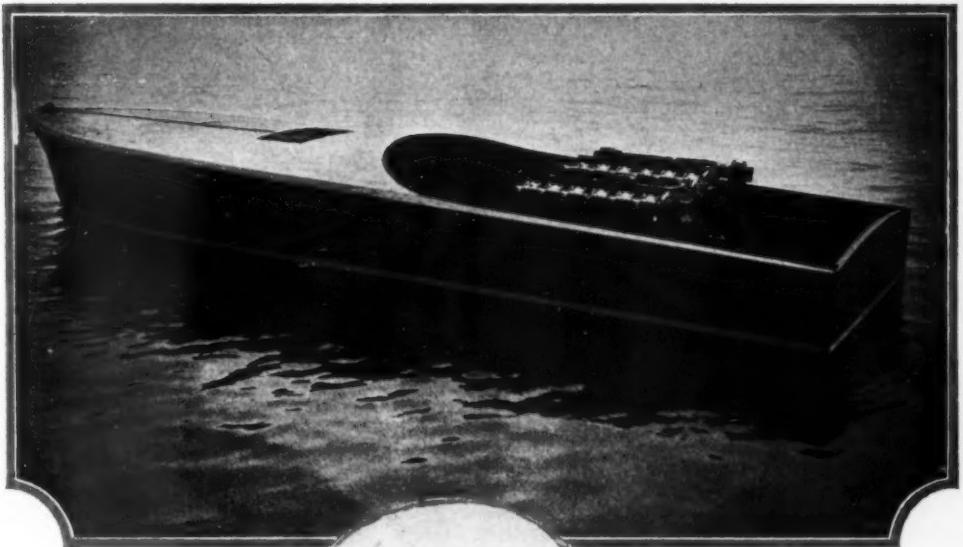


A view of the engine and cockpit layout of Miss Detroit V



Breaking the bottle of real champagne on the bow of Miss Detroit V

*Miss America, the
28-footer, with two
400 h.p. Liberty
motors*



*Whip-po'Will, Jr., the third member of
the American team of challengers*

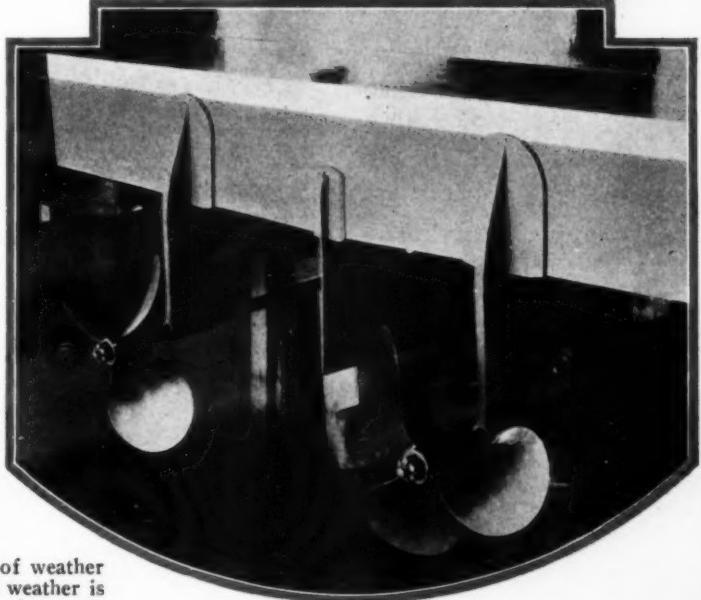


the fastest boats in the world when they have conditions to their liking. A 20-footer with a 400 h.p. Liberty motor can not be beaten. Seventy or even seventy-five miles an hour is not out of the picture if a crew can be found which can stand the punishment which is always coming to those aboard when a boat of this size travels over the water at such a speed. The element of human endurance is more of a factor in a small boat today than the question of hull design or power plant. The outfit which is the lightest per horsepower installed and which has the necessary strength is bound to win, provided the crew can stand the strain. Developments along entirely new lines must be followed if the racing of 20-footers is to last and the speeds continue to climb skyward.

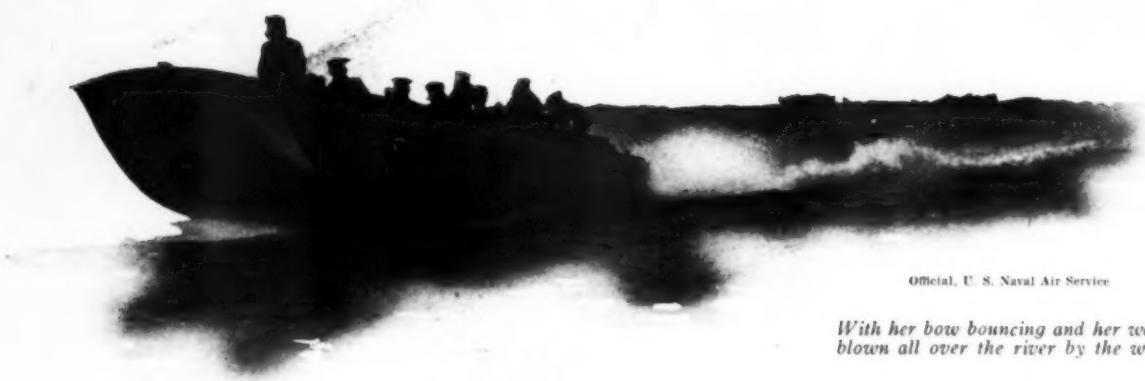
The water conditions under which the competition for the British International Trophy will be held will be decidedly different from racing conditions in this country during the last few years. As the course will be laid out in waters said to be semi-protected, some rough water at least must be expected. Probably at no time will the water be as smooth as the Americans have had it on their race courses in this country. Consequently the boats had to be built to stand rough water, and quite naturally the 20-footers would not do.

Very wisely Commodore Judson and Mr. Wood decided upon a team of three boats which will be well balanced and suitable for any kind of weather and sea which is to be expected. If very rough weather is experienced Miss Detroit V should come through a sure

(Continued on page 58)



The arrangement of propellers and struts on Miss Detroit V



Official, U. S. Naval Air Service

With her bow bouncing and her wake blown all over the river by the wind

Sea Sledding in France

Reciting the Adventures of an Intrepid Crew of Air Service Officers While on a Short Journey in a Strange Craft

By Clifford Albion Tinker, U. S. N. R. F.

PUNK!

The little amber-colored celluloid cube landed on the table, rolled over a few times, and then we counted five small black dots staring up at us. Yes! We would go to Blaye in the sea sled. Moulton had won the toss.

The next move on the program called for courage of the highest type. It meant nothing less than beardng the Officer of the Deck in his Holy of Holies and asking him for the use of the sea sled. And an Officer of the Deck at a U. S. Naval Air Station and Repair Base in France, especially the biggest station of them all—Pauillac—happened to be an official in whom was combined authority, dignity, hard-boiled action, and pure cussedness, all messed up with a general indifference to any sporting proclivities which might be found in the physical and mental make-up of any other officer on the station. It was a man's job to interview this Pooh-Bah in his own office.

We walked over to the boat slip and took a squint at the craft lined up there, getting up courage with every squint; and we eyed the sea sled tied to a mooring, up-stream from the slip, where she swung and veered in the wind and swayed and tugged in the bubbling current of the muddy old Gironde. She was covered with a great tarpaulin and evidently had not been in use for some time, a fact which we carefully verified at the boat house, the Petty-Officer in charge violently and profanely asserting that the sled had

not been used for a month while he was in charge of it.

A council of war brought out the trite fact that "in union there is strength," also that we had better call on the Officer of the Deck en masse, so the four of us, Moulton, Goodfellow, Snyder, and I, trailed over through the mud to the officer of the O. D. and his ungodly crew. Heaving up in front of the building we stopped and counted noses to see if we had maintained our union, then, with an air of importance and becoming dignity, some one of us, Snyder, I think, asked the orderly at the door if we might speak to the O. D. The orderly gave us the most cruel look I have ever seen on anyone's face on Sunday, clapped his hand to the butt of his "automatic," and motioned us, with his head, to enter.

We entered. One glance at the O. D. and we could see how welcome we were; and, had we been blind we would have known, for the O. D. bellowed at us: "Now what th' hell do you birds want?"

Moulton, who had been through the same agony once before, meekly inquired if we could have the sea sled to take a short trip to Blaye.

"To go to Blaye, eh?" sneeringly mocked the O. D. "Since this damned Armistice all you aviation officers have done is to travel around seeing the sights like a bunch of tourists! No! You can't have the sea sled!"

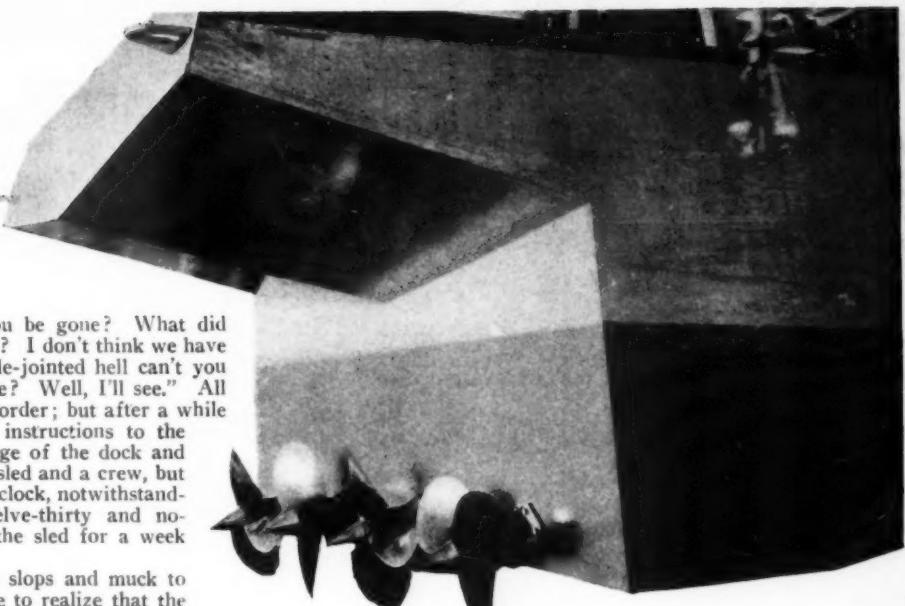
The orderly looked at us with an evil smile, and held the door open; but by malice aforethought and a previous agreement, made at the boat slip, we stood our ground.

"Why can't we have the sea sled to go to Blaye?" we all chanted in unison. "We want to see the town and also buy a steak dinner, and we will never ask for the sea sled again, so help us; Amen!"



Sea Sled designed to carry airplane just after launching with some work still to be completed

Stern view of airplane carrier sea sled showing the quadruple propellers



"Well, how long will you be gone? What did you say you were going for? I don't think we have a sea sled. Why the double-jointed hell can't you fellows go in an automobile? Well, I'll see." All this and more on the same order; but after a while we departed with written instructions to the Chief Petty-Officer in charge of the dock and boat slip to give us the sea sled and a crew, but we must be back by three o'clock, notwithstanding that it was then twelve-thirty and nobody else would be using the sled for a week to come.

On the way through the slops and muck to the boat house we had time to realize that the O. D. was merely an "Insect," a derisive and opprobrious appellation for "Ensign," outranked by every member of our party, and, as Moulton remarked, "He won't be so lord-awful hard-boiled tomorrow when he comes sneakin' 'round and asking me for a car to go to Bordeaux."

"The office makes the man; too much authority is more dangerous than a little knowledge," this from Goodfellow, self-appointed philosopher to the party.

Arriving at the dock, the C. P. O. on duty condescended to look at the written order; he read it; then came forth a series of blats for "Ho! Rummy! You'd Squeak and Stubb, get the sea sled and run these officers up to Blaye and back! An' you better get back at three o'clock sharp, too!"

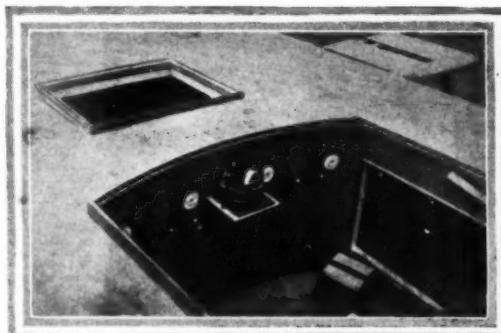
The three men named, Rummy, Squeak and Stubb, put in a somewhat belated appearance, giving signs of an inter-

rupted snooze, and we dragged along after them to the slip and waited around another half-hour while they argued about the best method of getting out to the mooring. Finally, they arrived at the gangway with the sled and we clambered down and on board, and seated ourselves in the cockpit.

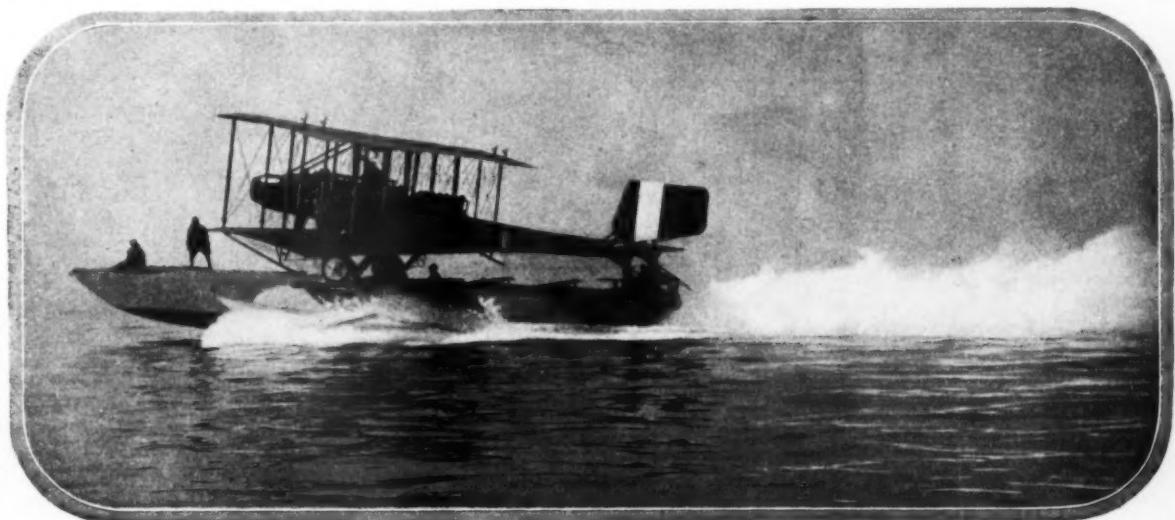
Backing out we passed the Captain's barge coming in. She was the trimmest little vessel, I think, that I ever saw. A beautifully modeled, well-appointed gasoline cruiser; brass-work all shiny, varnish bright as a mirror, upholstery new and luxurious; I wanted to take her for the trip, not caring particularly for freak boats—you see I had

never been in a sea sled before; I changed my mind before the day was over; even before "three o'clock" had rolled around.

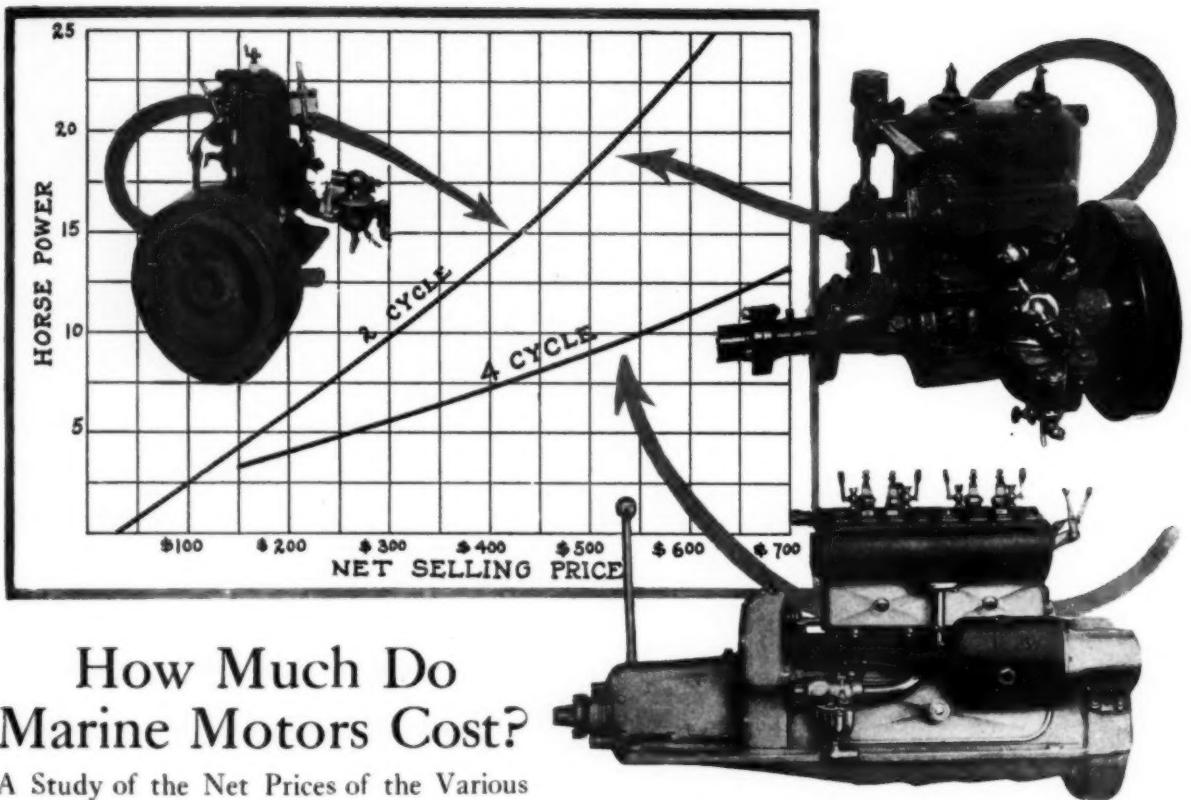
(Continued on page 90)



View of the control cockpit with some of the navigation instruments in place



Method of carrying an airplane on a fast sea sled to enable it to take off from the water



How Much Do Marine Motors Cost?

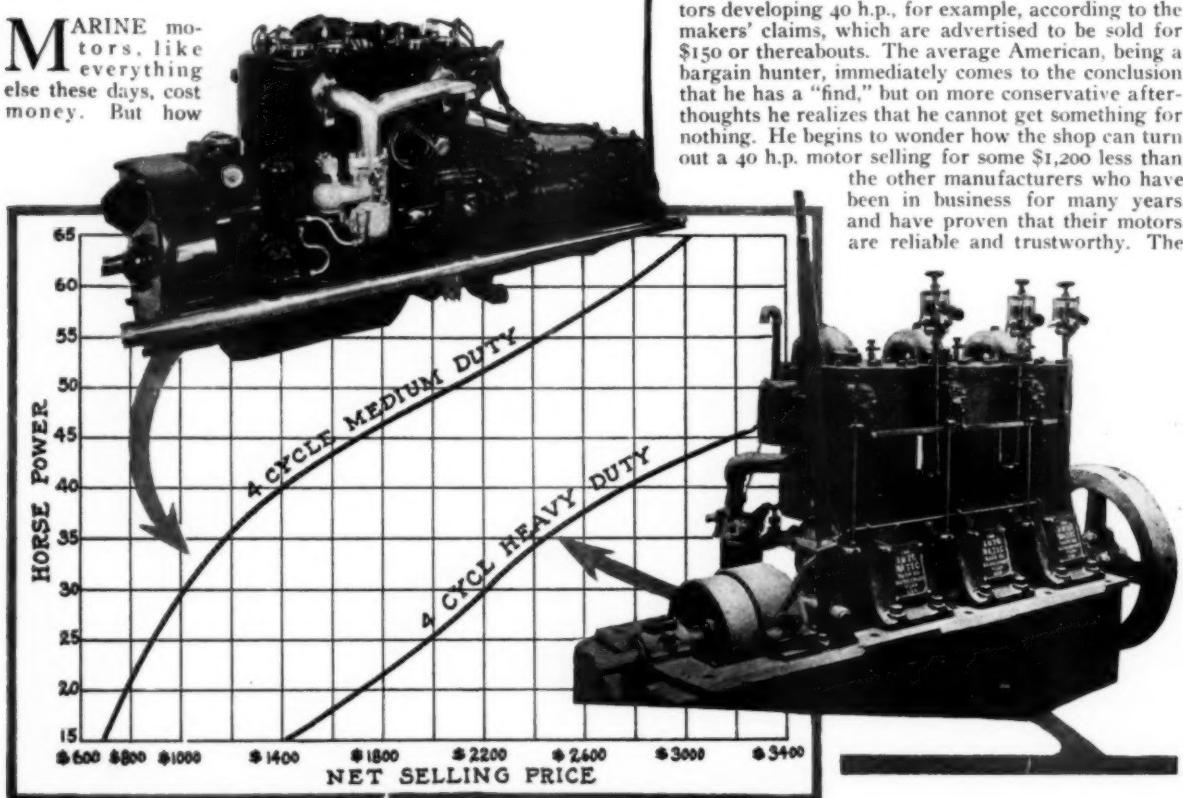
A Study of the Net Prices of the Various
Marine Engines Manufactured Today
Which Brings Out Some
Interesting Data

MARINE motors, like everything else these days, cost money. But how

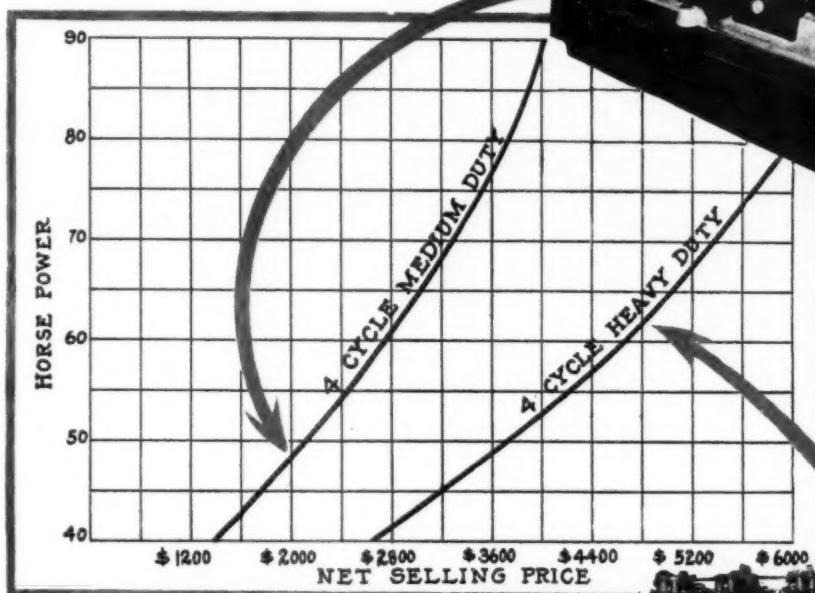
much would a motor of this or that horsepower cost, is often asked. Also we are frequently confronted with the query as to whether a certain motor claimed to develop, we'll say, 20 h.p. is underpriced or overpriced in comparison with other

similar motors on the market. We hear of some motors developing 40 h.p., for example, according to the makers' claims, which are advertised to be sold for \$150 or thereabouts. The average American, being a bargain hunter, immediately comes to the conclusion that he has a "find," but on more conservative after-thoughts he realizes that he cannot get something for nothing. He begins to wonder how the shop can turn out a 40 h.p. motor selling for some \$1,200 less than

the other manufacturers who have been in business for many years and have proven that their motors are reliable and trustworthy. The



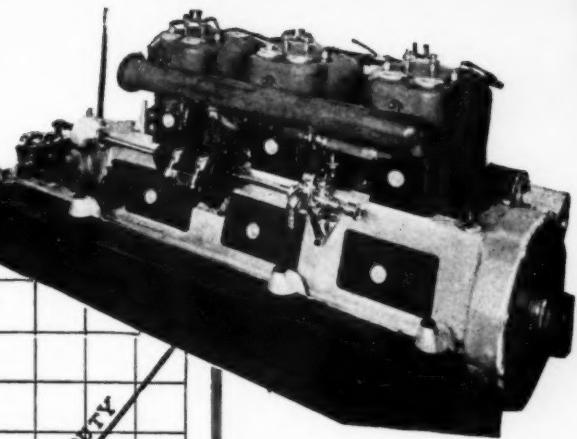
answer invariably is, "It can't be done." If a marine motor is priced far under the market prices of similar powered motors there is always a reason for it. The data and curves on these pages will give one a good idea of the approximate price one must pay for a



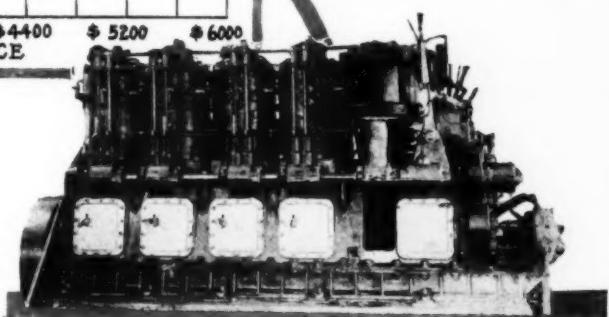
really first-class, up-to-date, high-grade marine motor.

These are days when the average motor boatman craves speed. Nearly every motor boatman has in mind making a change of power plants some day in order to increase the speed of his craft.

The cost of increased speed, unless the particular hull is well suited to the increase, is very high. Very often to gain an additional two knots in boat speed it will be necessary to double the power. Even then the increase is obtained only at a great increase in the running charges due to the additional fuel which will be consumed. Such a change in power plants results in a very uneconomical and inefficient outfit throughout. It would have been much better to have started fresh with a new hull designed for the speed which the owner desires instead of attempting something which will always be a makeshift at its best.



Quite naturally the prices charged by the various manufacturers of marine motors for a motor of a given power must vary considerably. For example, the costs to manufacture a 30-h.p. two-cycle engine will not be the same as those to build one of the same power but of the four-cycle type. Similarly, a 40-h.p. medium-duty motor costs



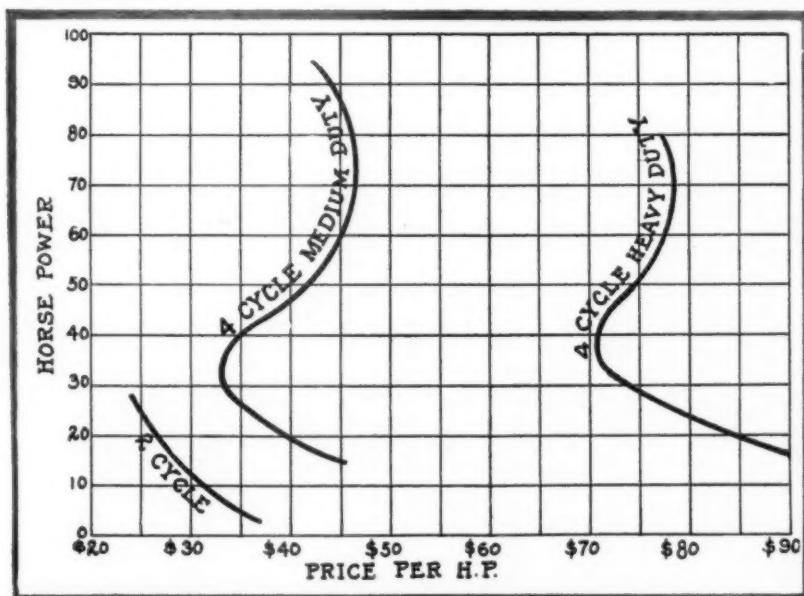
less to build than a 40-h.p. motor designed solely for heavy-duty work. As the line of transition between medium- and heavy-duty models and their characteristics is not a clear-cut one, it follows that the prices for a given power of marine motor must necessarily vary considerably. However,

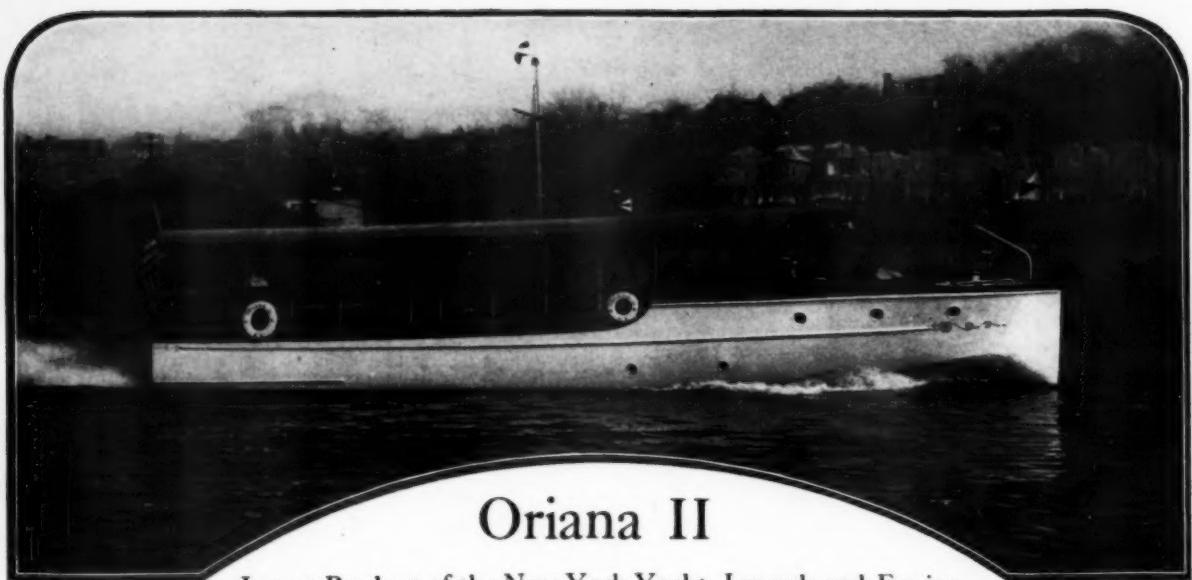
the basic principle still remains, that is, that a cheap motor or one not designed and built originally for marine service, such as automobile motors or a discarded aviation motor, will always fail.

The data from which the curves on pages 12 and 13 were plotted was obtained from a large number of the manufacturers of American marine motors. From these net prices the averages were computed. There are cases, we appreciate, where the prices quoted by a particular builder will be in some instances higher and in others lower than those shown by the curves, but in general they show the trend in prices today.

If one is figuring on 12 h.p. for his craft he must first decide whether he prefers one of the two- or four-cycle type for his installation. If he chooses the former, by referring to the curves at the top of page fourteen he will see that his motor should cost him about \$350. If he decides that a four-cycle en-

(Continued on page 94)





Oriana II

Latest Product of the New York Yacht, Launch and Engine Company is a Most Complete High-Speed Cruising Yacht

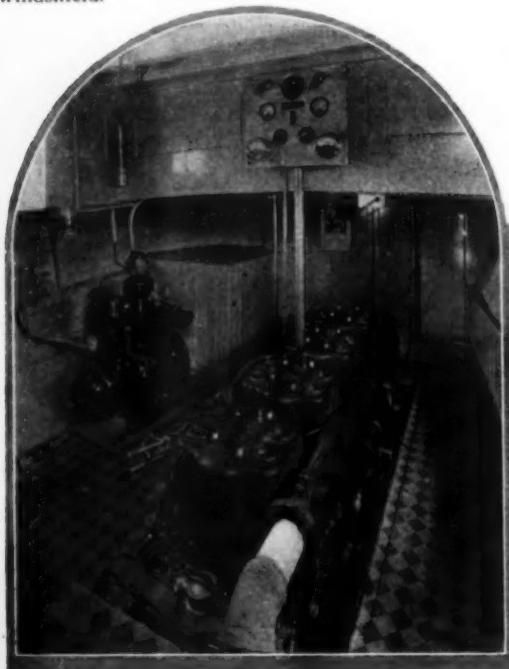
MONG the season's prominent new yachts is the Oriana II, just delivered to A. T. Murray, president of the American Bosch Magneto Company by the New York Yacht, Launch and Engine Company.

Oriana II is 53 feet long, 12 feet 6 inches beam and 3 feet 3 inches draft and is substantially built in every detail. An idea of the construction can be gained from the following description: The keel is of white oak sided 6 inches. Stern framing and stem are of white oak. The shaftlog is of white oak 7 x 7, and the deadwood is white oak sided 5 inches. Frames are steam bent white oak $1\frac{1}{2}$ x $1\frac{1}{4}$ inches at the head and $1\frac{1}{2}$ x $1\frac{3}{4}$ inches at the heel. The floors are of white oak 6 x 2 inches. The bilge stringers, hogging clamp, main clamp, shelf and upper clamp are of yellow pine. All planking is of yellow pine finished 1 inch thickness; copper fastened throughout. The decks are of white pine. Mahogany is used for the trunk cabin and windshield.

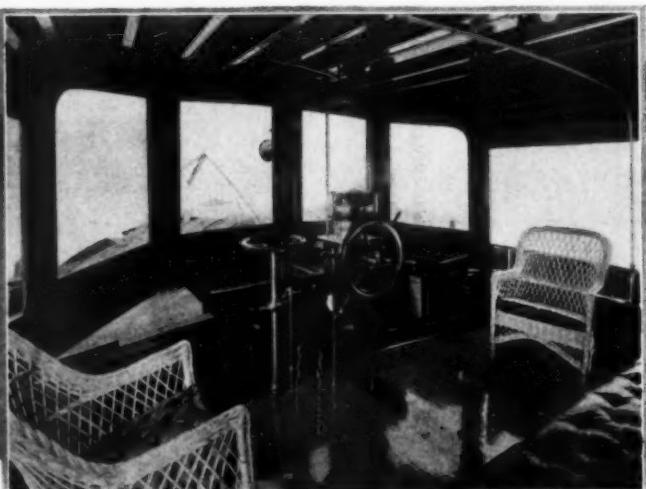
The interior finish of this boat is raised paneled poplar, white enameled, rubbed to a flat finish. All bureaus, lockers, etc., are of mahogany. Plumbing supplied by J. H. Curtiss Company, and the fixtures are of the latest type. Stove is fitted with a kerosene burner attachment which eliminates the use of coal, at the same time giving every advantage of a coal range. The gasoline tank is of copper with a capacity of 350 gallons. Material for the interior decoration, including carpets, curtains, upholstery and coverings, were furnished by W. & J. Sloane and are of excellent taste. There are two small boats, one a 14-foot tender and an 11-foot dinghy.

Oriana II is laid out with guests' quarters forward consisting of two built-in berths, a built-in toilet and the necessary lockers and drawers, making this compartment complete in itself. Partly under the bridge and partly in the main cabin is the engine-room, which is fitted with an eight-cylinder Sterling engine and a Delco electric outfit. The crew's quarters are also located in the engine-room, having accommodations for two men. The galley is aft of the engine-room and extends full width of the boat, and is fitted with built-in ice-box, sink, shipmate coal range, dresser, etc. A large main saloon is aft of galley on each side of which is a Pullman berth and a locker. Owner's quarters consist of a stateroom aft with two built-in berths, lockers and bureaus and a toilet. The passage to the owner's quarters is from the starboard deck.

Photographs by Edwin Lerick



Under the bridge is the eight-cylinder Sterling motor and the Delco auxiliary electric set



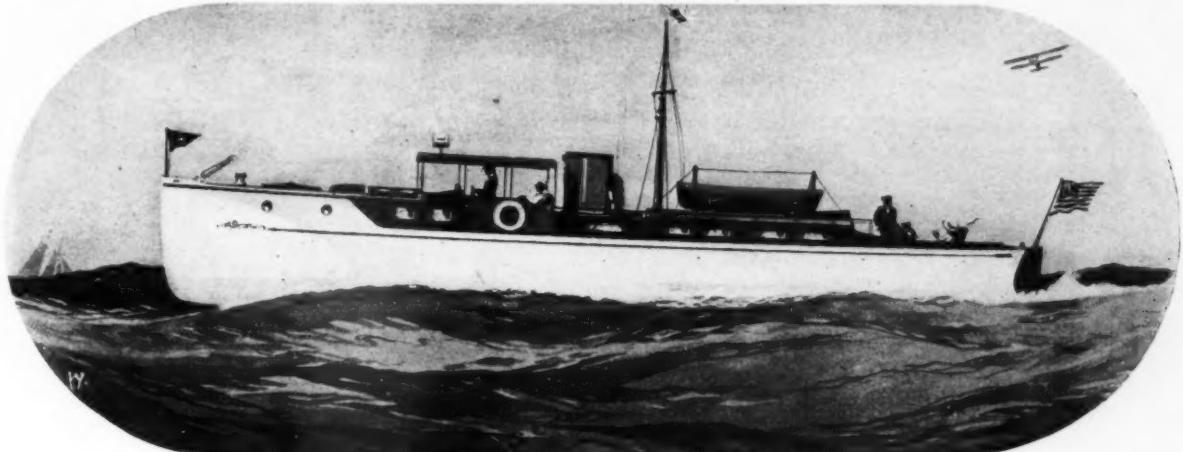
Entirely enclosed, the bridge deck is most comfortable

Miss Liberty II, A Great Lakes Product

MISS LIBERTY II being built by the Great Lakes Boat Bldg. Corp., of Milwaukee, Wis., is a worthy successor to Miss Liberty I in service for two seasons and built by the same company. Two seasons, however, have brought about a definite change in motors and cruising speed, ten miles an hour faster, as, having two of the dual-valve Sterling eights, totaling 600 h.p. Miss Liberty II will cruise at about 30 miles an hour. The engine room is

separate from the cabins and contains all the machinery.

The possibilities of cruising on inter-city and week-end trips at express speed, sans railroad strikes and the like, afford ample reason for a floating high-speed palace such as Miss Liberty II. As such she will be used, cruising to the Thousand Islands, Georgian Bay, and many other lake rendezvous during the summer, and south via the Atlantic Coast route to Florida in the fall.



Miss Liberty II does 30 miles per hour with a pair of Model GR Sterlings

Martha H, A Sterling Powered Cruiser

SAILING from Rochester, Martha H will do extensive cruising on Lake Ontario and its tributaries this summer. This boat is a standard 40-foot Rochester cruiser, equipped with a six-cylinder Model GR dual-valve Sterling motor which produces a speed of better than 20 miles an hour.

The boat is completely equipped for cruising and is heavily constructed throughout, the glass-enclosed bridge deck

being a weighty item in itself. The speed attained is noteworthy in consideration of the substantial construction used. Accommodations are provided for four persons in the forward cabin with upper and lower berths. The after cabin will provide for two additional on a permanent built-in berth.

This boat owned by Donald Woodward of Le Roy, N. Y., will form a noteworthy addition to the season's new boats.



Sterling powered stock 40-foot Rochester express cruiser

The Mississippi Valley Regatta

Great Interest in Class Races Shown by the Gathering at Burlington, Iowa of Motor Boatmen from All Ports in the Middle West

By W. V. Kidder; C. P. Hanley, and A. C. Strong



A close finish of a class race on the Mississippi

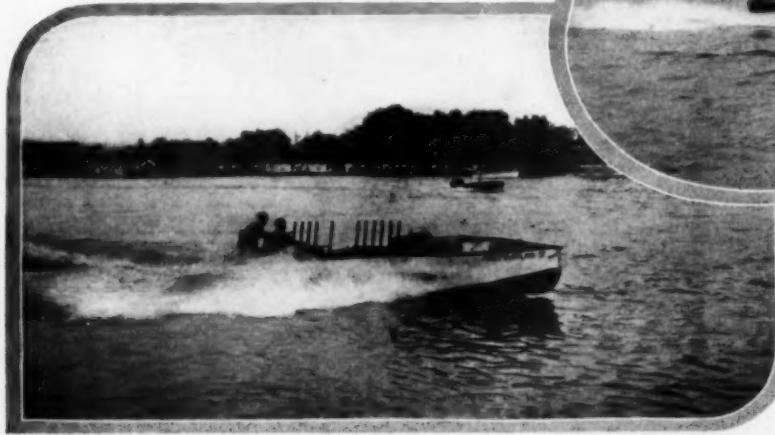
THOSE who are most familiar with the work done by the Mississippi Valley Power-Boat Association during the last twelve years are agreed that this organization occupies the unique position of having originated, promoted, and proved successful a system of racing classifications which has done so much in the Mississippi Valley States to stimulate popular interest in boat racing, that the same system is now being followed in various other parts of the country, with success quite as great.

The Mississippi Valley Association, with forty-seven active yacht and motor boat clubs located along Western rivers and lakes, is one of the large and influential boating associations of the country. When it was organized in 1908 its rules were in accord with the then popular idea that the size of the hull was the proper determining factor. It was not long until crafty racing men had proved that more speed could be crowded into a

sign was, and is still, left to the ingenuity of the builder. The success of this system for increasing the speeds and perfecting designs of small racing boats has been remarkable.



*Miss Detroit II
which also holds the
Mississippi Valley
speed record*



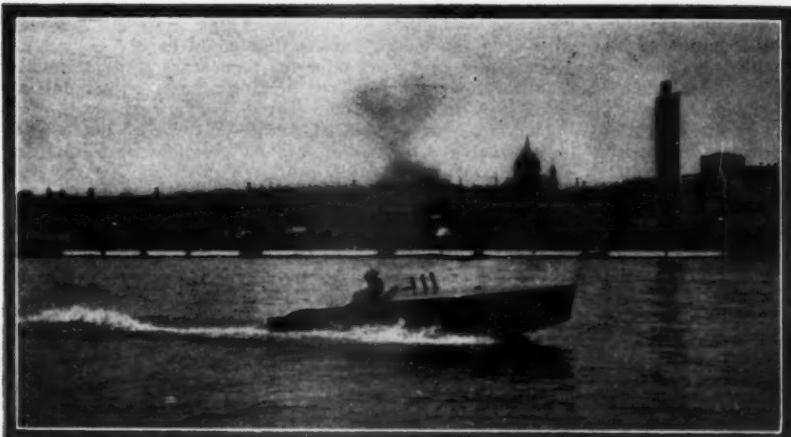
*Ugly Duckling, a 16-footer, with two six-cylinder motors
connected in tandem*

20-foot class boat than anyone had ever been able to get out of a 40-footer. In consequence the Valley Association arranged a system of classifications in which the cubic inches of power employed was the basis of calculations. Hull de-

Sixteen-footers with only 151 cubic inches of piston displacement make 31 to 32 miles an hour as a regular thing, and 151 boats are promised for the Burlington regatta in July whose owners claim are capable of thirty-five and thirty-six miles.

The Mississippi Valley Power-Boat Association has not confined its activities, however, to small class boats, but has raced many of the fastest and most famous boats in the country during the last five years, establishing world's records in more than one instance.

This association has done a big work in the legislative field and in securing river and harbor improvements, and to encourage the use of pleasure boats not in the speed class.



Miss Billie Burke, one of the famous little fellows in the West

Visiting boats come to its regattas in fleets from the various western cities and in some instances as many as a thousand craft have been assembled at the regatta city.

Publicity for boating has been another part of the Association's program, and each season a regular news service, with illustrations ready for use, are sent to a list of Mid-western newspapers, in promotion of the Association's annual regatta, thus bringing the pleasures of motor boating to the attention of several millions of newspaper readers two or three times each week during the active summer season.

With a reputation of fair and square treatment of the racing men, the Valley Races this year are attractive entries from many distant points, including Toronto, Detroit, Cleveland, New York, Buffalo, New Orleans, Hamilton, Ontario, besides the scores of cities in the Central States of Minnesota, Wisconsin, Iowa, Illinois, Michigan, Indiana, and Missouri.

AFTER an absence of twelve years, the Mississippi Valley Power-Boat Association returns to Burlington,

Iowa, the scene of the second regatta of this Mid-west Association some twelve years ago, for its annual race meet on July 2, 3 and 5.

Prospects were never brighter for a record breaking meeting, not only in the large number of speed boats that are already assured, but in the fact that thousands of boatmen and followers of the sport are planning on journeying to Burlington for the races.

Perhaps the Valley regattas differ



Little Chief Red Wing, a remarkable little boat which shows the possibilities in a 14-footer

from any others held in this country owing to the fact that the town where the races are held makes the event an occasion for a big celebration, a community affair where everyone living in the town takes hold and helps. Of course, this year, as of old, will see the huge grand stand circus like on the river front, the town gaily decorated in honor of the boatmen, boats and boatmen everywhere, with brass bands on the streets and everything that goes to help entertain the visitors. It is conservatively estimated that Burlington will entertain 50,000 boatmen during the three days of the regatta.

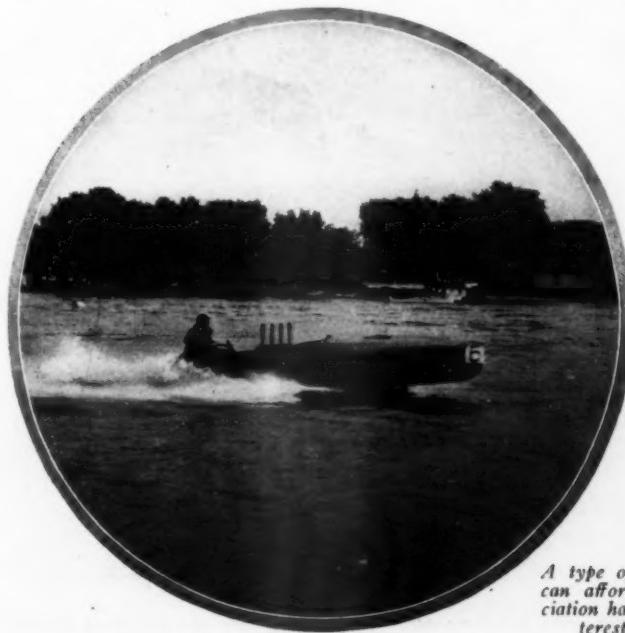
As to the races themselves: The Valley Association run their races according to the piston displacement of the motors which has encouraged the building of a lot of fast class boats by the Mid-west boatmen, and one will see astonishing speeds made by these little fellows and they furnish real sport and entertainment for the spectator. Of course, the big high-powered fast crafts will be on hand, such as the Detroit, Miss Toronto and the like and the wise ones expect to see Valley records fall when they cut loose on the fast course at Burlington.

The races proper will consist of the 151, the 224, the 320, the 478 and the 695 cubic inch class races for the small powered craft, while for the bigger fellows will be the 1,300 class, the Admiral's Trophy Race, Cruiser Race, Mile Speed trials and the event of the meet, the Webb Trophy Race.

FOR the last thirteen years the Mississippi Valley Power-Boat Association has held an annual regatta on the Mississippi. The Association started spontaneously from the necessity of verifying reports from the neighboring river towns. In 1907 while few boatmen had the vision to lie above fifteen miles per hour still they lied.

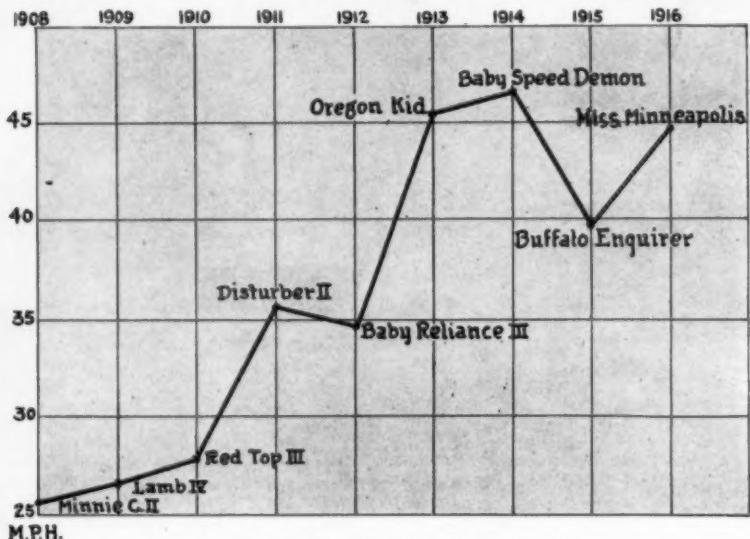
A type of racing craft that anyone can afford. The Mississippi Association has done much to develop interest in this type of racing

John Doe, of Davenport swore deep fresh water oaths that his launch (speed 15 m.p.h.) could run circles around any other boat on



the river. This reiteration produced a self-hypnosis of all his Davenport river rat friends. Sans doute John had the swiftest two lunger in the U. S. A. Meanwhile Richard Roe, of Muscatine was burning up the placid Father of Waters and telling the world (i. e. Muscatine) that he could trim any boat Davenport ever dreamed of building with his honest 15 m.p.h. pleasure boat. They were not pleasure boats, they were rough factories. You could count the coughs, allowing for misses and stay under 350 r.p.m.

These unsubstantiated opinions began to irk the river rats and factions arose. So the neighboring river towns and most of their prevaricating populations came together at Muscatine in 1908 and held the first regatta of the M. V. P.



Speeds made in races for Webb Trophy

B. A. It was a memorable regatta. The Johns and the Richards were there with their guaranteed 15 m.p.h. paragons. After the smoke of the gasoline battles had blown away, and all had finished, it was found to be the consternation of Davenport and Muscatine, that a Republican dark horse from Burlington had won the race in question, at the rate of 12 m.p.h. But it cleared the atmosphere.

They still lie out our way, and having more vision, it is now 50 m.p.h. The halucinations of a fevered imagination, however, do not live so long. Each July is a clearing house for the improbable. Each regatta sees new speed records established approximating the boats of a year or so before.

The M. V. P. B. A. has reached the stage where it is pointing with pride to present and past performers. Just now we are pointing the hardest at Gar Wood, who did his first motor boat racing in the Valley. Others receiving the finger of approbation are Chris Smith and his two sons Jay and Bernard; Commodore Blackton, W. E. Hughey, Tom Webb, Jim Pugh and also others who are gone but not forgotten. Many weird names unknown to the landlubber are household terms with us. Such as Minnie C; Lamb; Baby Reliance; Oregon Kid; Disturber; Red Top; Miss Minneapolis; Miss Detroit, and other virgins; not forgetting the lesser lights—Ugly Duckling; Leading Lady, and P. D. Q. There are dynasties of these honorable names and the grand sires would never recognize their speedy offsprings.

Thirteen years of Valley history gives a cross section of speed boat development in America. Each M. V. P. B. A. regatta sees an improvement in hull and motor design. The first racers were long narrow launches

with deep sharp bows, boats that could hardly get out of their own wake. Next came the elementary planers, neither flesh nor fowl nor good red herring; crafts with inquiring noses high in the air, and sterns awash. Then all of a sudden step boards appeared, running better each year. Now they travel five times faster than John Doe of Muscatine. The cough of 1908 is now a high-pitched tone.

Motors have improved as well. The early boats were powered with motors which today would be called slow-speed heavy-duty. The war gave a great impetus to design, and big motors beyond the dream of the wildest river rat are now available for the wealthy. However, the piston displacement classes are the events which keep the sport

alive and kicking in the Valley. Liberties are not for us. Some philanthropic manufacturer may yet produce a four-cycle racing motor for classes 151 cubic inches and 215 cubic inches. At present one well-known two-cycle motor wins the brown derby.

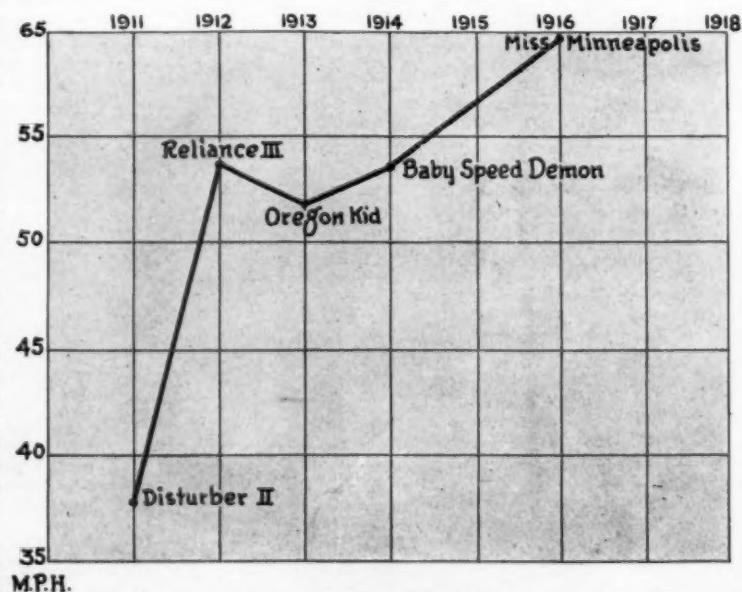
Of the old champions, Minnie C of 1908 is to be remembered. She was a narrow 40-footer with a Smalley two-cycle motor and was considered remarkably fast at 25.35 m.p.h. It was three years until a Valley boat approached 30 m.p.h.

Lamb IV of 1909 was a 32-footer powered with a four-cycle Lamb motor and won her events at 26.27 m.p.h.

The year 1910 saw the first tentative attempts at planers. Cero II stuck her nose in the air and did 25.56 m.p.h. with a White steam power plant.

In 1911 there were several hydroplanes at Dubuque. Among them were Disturber II a 40-foot Fabre hull powered with two four-cylinder Sterlings 4½ x 5½. She roared along at the unheard-of speed of 38.54 m.p.h. Hughey's Red Top III another Fabre 40-footer was a beautiful boat. The hull had great possibilities. The eight-cylinder, two-cycle Bellevue motor, however, was unusually temperamental and refused to perform satisfactorily.

In 1912 Chris Smith brought two 20-footers to the Davenport Regatta and demonstrated that classification by length over all meant nothing. Reliance III with a twelve-cylinder 5½ x 6-inch Van Blerck negotiated one mile downstream at the rate of 53.9 m.p.h. The other boat was Baby Reliance. (Continued on page 54)



Curve showing how speeds have increased since 1911—best speed made in one mile dash. Data for curves supplied by Dr. A. C. Strong

Advent of Motors in Far East

Windjammer Junks Being Fitted with Marine
Motors in the Land of the Cherry Blossoms

By E. R. Dickson

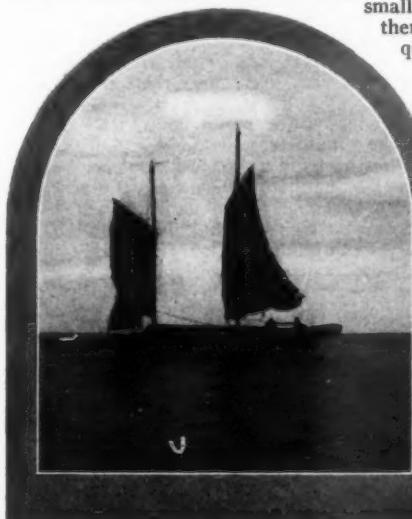


Types of Junks which carry the greater part of Japan's commerce and which are rapidly being fitted with motors

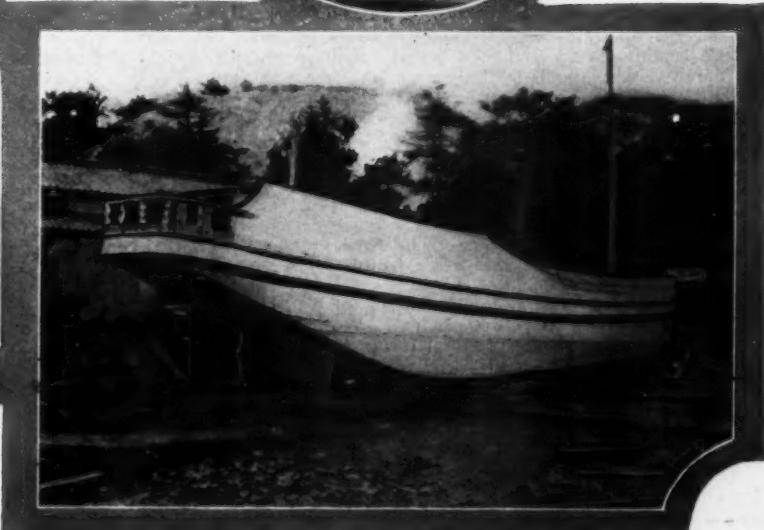
AS the traveler to the Orient first approaches the shores of Japan, he probably first notices the wonderful truncated cone of Fuji-yama rising in the distance over the low foothills about the harbor of Yokohama. But certainly the second sight which will attract his attention will be the innumerable picturesque water craft which swarm over the bays, harbors and coastwise waters. Japan, of course, is an island empire, consisting of some thousands of large and small islands, and there has consequently always been the necessity for trans-

portation by water of large quantities of miscellaneous cargo. This necessity has been met in the past by swarms of junks, with their low bows, high sterns and peculiar sails, braced horizontally with bamboo poles. Under the high stern was one little room, in which the *sendo*, or boatman, lived with his family, all of whom, including the wife, assisted in working the craft. These junks, seldom over 60 feet overall, even today travel up and down the coasts of the larger islands and between the thousands of smaller islands, carrying foodstuffs and various raw materials from the little villages to the large industrial cities, and manufactured products back again. Before steamships came into common use, they used to make trips to Korea, China, and Formosa, and

*Typical
of the
newer
Junks
which use
sail to sup-
plement the
power plant*



*The antiquated Junk with
sails braced by bamboo poles*



*One of the newer type of Junk about ready to be
launched at the local Japanese building yard*

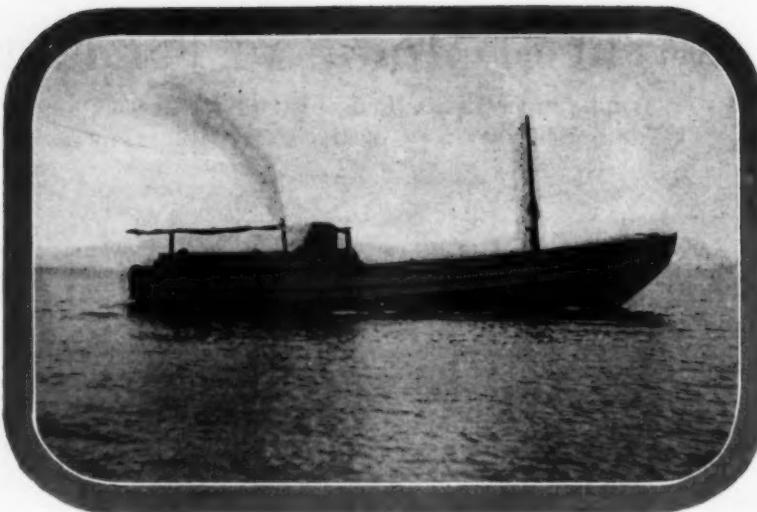
one or two instances are on record of these junks having crossed the Pacific to the United States. They were never built in large sizes, due partly to a custom originating in a government order in the Tokugawa period, when Japan was closed to foreign intercourse. In order to prevent the people from crossing to other countries an edict was promulgated fixing the size of the vessels which could be built when the country was opened to foreign trade.

after the visit of Commodore Perry, instead of increasing the dimensions of their native craft, the Japanese built their larger vessels upon European plans. Hence the junks remain, in size and general construction, much the same as they were 400 or 500 years ago.

These junks are all built with V-bottoms—they are probably the original V-bottom boats of the world—and can sail with remarkable speed before or across the wind, but as they are not provided with center boards, lee boards or other contrivances to prevent drift, they cannot tack against a head wind with any great degree of success. Consequently they are often anchored for days in the lee of islands or in convenient ports, waiting for a favorable wind and tide to carry them on to their destination. This was all right in the old days, when time meant nothing to the Japanese but today Japan is rapidly becoming a bustling industrial nation, with all the demand for rapid transportation which that implies. As a result, from the junk has been developed a type of motor-driven cargo boat which is unique to this part of the world. Originally slow-speed, heavy-duty motors were installed in some of the junks, but it was soon found that the junks were not constructed in such a way as to stand the vibration of the motors, and that, moreover, the design of the craft was such that they would bury their bows when being driven full speed into a head sea. Eventually a type of vessel was developed which answers the purpose for which it was created very well, which has a fair turn of speed and which appears to be reasonably seaworthy.

The type finally evolved is from 50 to 70 feet over all, with a combination V- and flat-bottom, a sharp prow and no flare. Under the bow the bottom is V-shaped, but a short distance aft the flat bottom starts and under the stern the bottom is entirely flat. This is done to permit the vessel to run onto the beach, as very few of the little villages along the coast have docks or small-boat harbors. There is a fairly high freeboard and from the cargo hold aft the sides are raised to the height of the engine-room roof. The most peculiar characteristic of these vessels, however, is the tremendous overhang of the stern. The flat-bottom starts to rise about two-thirds of the boat's length from the bow and makes a graceful double curve to the stern. This places the propeller under the vessel some 8 or 10 feet from the stern. The purpose of this unusual overhang, it is stated, is to provide living quarters for the crew without increasing the size of the hull beneath the water or detracting from the cargo-carrying capacity. There is usually one short, light mast, to which a small sail can be fitted, but which seems to be used principally for carrying the large house flag of the boat.

The internal arrangement of the vessels differs somewhat from that in general use in the United States. The chain and sail lockers take up the first 4 or 5 feet from the bow, after which comes the one large, open cargo hold, occupying



Motor cargo vessels of this type are rapidly displacing the earlier models

over half of the internal measurement of the boat. This hold runs from the chain locker to the engine-room and from side to side of the vessel, leaving no deck space whatever. There is no hatch, but the cargo is usually covered with planks and tarpaulins in wet weather. Aft the hold is in the pilot house, extending partly over the hold and partly over the engine-room.

Below and aft the pilot house is the engine-room, which is lighted by ports in the raised sides of the vessel and ventilated by a hatch. Communication between the pilot house and the engine-room is by means of bells, without which the Japanese do not appear to be able to run a power boat of any size. I have even been on a limousine runabout in one of the Osaka canals, where the driver and an engineer sat side by side on a seat just behind the engine. When the driver was ready to proceed, he rang a bell for the engineer to stand by and the engineer gravely reached down and grasped the clutch handle. Two bells and the engineer shoved in the clutch and we were off!

Aft the engine-room is a single small cabin where the whole crew (usually consisting of four or five men, besides the captain) live and sleep during a voyage. Being situated directly over the propeller and opening into the engine-room, this would not appear to afford desirable sleeping accommodations, but the Japanese possess the really enviable ability of sleeping anywhere and under any conditions, so the vibration, noise and smell do not disturb them. This cabin does not have full headroom, but as the Japanese squat on the floor instead of sitting on chairs and sleep on quilts spread on the floor, this lack of headroom does not inconvenience them as it would us. In the stern is usually a small deck space, 3 or 4 feet long, where the members of the crew light their charcoal fires, cook their meals, perform their toilets, etc.

The engine with which these cargo boats are equipped are almost without exception massive single-cylinder, two-cycle, hot-bulb motors of from 25 to 40 h.p., depending on the size of the vessel. The motors burn kerosene or *keiyu*, a light oil a cut below kerosene. Gasoline is very expensive in Japan (at present about eighty cents gold per gallon), so gasoline motors are out of the question for freight boats. These semi-Diesel motors used to be imported from the United States and Sweden, but lately the Japanese have been manufacturing their own and, as far as I have been able to observe, they give excellent service. I have seen them pass a point a few miles out of Kobe thousands of times, and I have only seen two breakdowns, and only one breakdown so that it could not be repaired on the spot. They exhaust great quantities of white smoke, indicating a wasteful consumption of fuel, but as I have been unable to obtain data as to the fuel consumption per horse-power hour, accurate comparisons cannot be made. The smaller sizes of the motors are built with reverse gears, but the larger motor reverse direct. Most of them are made in Osaka and Tokyo.

Originally these motor cargo boats were built to carry fresh fish to the markets in the larger cities from the little fishing villages, but their adaptability to general cargo-carrying was soon perceived and at present they are operated on regular routes for freighting all sorts of cargo, particularly perishable stuff. Heavy

(Continued on page 60)

From New England to the Chesapeake

Cruising Under Sail and Power In Some of the Most Interesting Waters within Easy Reach of Big Coast Cities

By Major J. Casey

WE had planned to start Sunday night, October 1, but owing to some uncertainty about the insurance, our departure was postponed to the following forenoon.

Northeast, which drove Safety pell mell down the bay. The run to Dumpling Rock Light was made in 35 minutes, then we swung on the course for Misham Point, and Old Cock Spindle S.W. by W. $\frac{1}{2}$ W., $7\frac{1}{2}$ miles.

At the Old Cock on Hen and Chicken Reef, we changed the course to W. $\frac{1}{2}$ S. for Point Judith, and settled down for a twenty-four-mile run. We were running wing and wing before a freshening breeze, the water boiling and foaming around us. The tender, with a long line astern, though towing easily, was hitting the high spots, while the two-cylinder Doman below decks, was contentedly chugging along under half throttle. The sun was shining brightly, and warming things, which was a welcome feature, as a cold snap had struck town a couple of days previous. Old Cock abeam 10.20, Sakonnet Light 11.35, and at two o'clock we were snugly anchored behind the Breakwater at Point Judith.

Safety First is by no means a speed boat. As the name implies, she was built for safety first. The dimensions are: length overall 30 feet, beam 10 feet, draft 3 feet. As can be seen by the illustrations the craft is ketch rigged, but having all

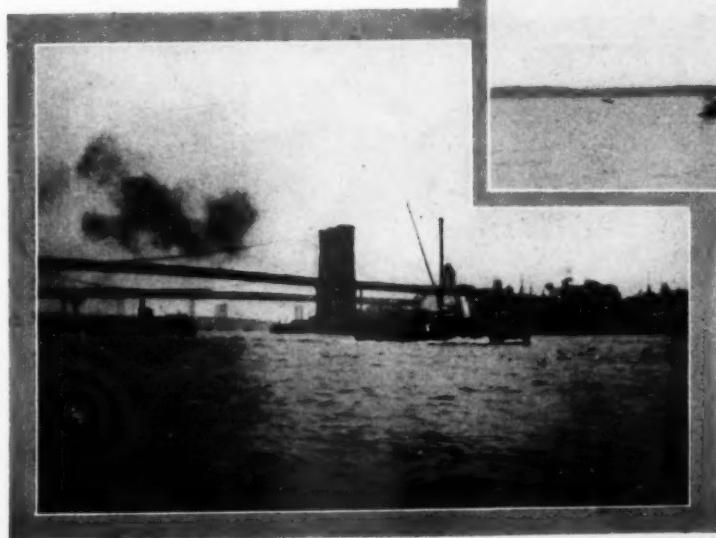


Coming down Long Island Sound with the help of a spanking breeze

Sunday afternoon the run was made from New Bedford to the Yacht Club Station at Padanaram for a supply of water and gas, and the night was spent at the club dock. The next morning after much time taken up by the Captain and members of the crew, telephoning to the insurance agent, wives, and sweethearts, a start was made at 8.35. We proceeded under power until well clear of the fleet lying at anchor, and then hoisted sail to a good spanking breeze from the

the features of a power boat. Steering is done on the bridge deck, with wheel on a column amidship, and all controls handy. A 900-pound iron keel, and about two tons of inside ballast, gives Safety very good stability; and so easy is the going in a seaway, that it is a real pleasure to be on board. The nerve-wracking rolling, and jumping of the ordinary, all on top of the water craft is completely eliminated.

The generous beam, gives plenty of room below decks, which is divided up as follows: Water tank, ice chest, and galley forward occupying eight feet. This department is completely equipped, having plenty of lockers for dishes, food, etc. A good size sink with running water, large dresser, and a good size coal stove; this latter was a real comfort during the trip, keeping the cabin warm and cozy. Next to the galley is the main cabin 10 feet long, having two berths, clothes lockers, built-in china closet, and plenty of room to move around, in fact, there is room enough for two easy chairs. At the after end of this cabin on the starboard side is located the toilet room, fitted with Sands toilet, built-in wash basin and running water. The bridge deck comes next, under which is the engine-room. Here



Stepping Stones and Brooklyn Bridge are prominent landmarks at the beginning and end of the East River

is installed a two-cylinder 10 h. p. Doman, that is always on the job. This room also contains two gasoline tanks of 46 gallons each, and a 20-gallon water tank for the basin. Oil, waste, tools, etc., are stowed away in several spacious lockers. Next, and occupying the extreme after part of the boat is a stateroom having a double berth, storage for dress suit cases, and several other lockers. In fact, so many are the lockers in Safety First that a whole express load can be stored away and hardly be seen.

The crew was made up as follows: J. Edwin Jones, local superintendent of the John Hancock Insurance Company, called Commodore on account of his age, which must be

a glorious sunset which gave good promise of fair weather for the night and following day. The wind having gone down with the sun we took in sails. The passage into Fisher's Island Sound is very narrow, and is marked by quick flashing gas buoys. The helmsman must be very careful as three flashing lights are in sight at once. The second flashes slower than the first and the third, Latimer Reef Light, very slow. These are all left on the starboard side running west. Course W.N.W. $\frac{1}{8}$ W. to Ram Island Light Vessel, which was abeam at 8.16. Having had supper on the way we forthwith made plans for the night's run. College Point, Flushing Bay, was our first objective anchorage where the captain was to meet a friend. The commodore and the parson chose the first watch from nine to one A. M. (we had all stood watch up to this time). The wind having again risen, sails were hoisted, and everything made snug for the run. Ram Island Light Ship, which is a fixed white, was abeam. Course was W. $\frac{1}{4}$ S. to North Dumpling Light, $2\frac{1}{2}$ miles, which we left on the port beam at 8.35. At 9.35 we were up with Bartlett's Reef Light Ship. Owing to a strong head tide it took us an hour to make this six miles. From Bartlett's to the Cornfield Light Ship the course was changed to W. $\frac{1}{2}$ S., distance 12.6 miles; abeam 11.15; wind N. E. carrying full sail.

By this time the captain and second mate were below enjoying what sleep they could. About twelve o'clock the former was awakened and looking up saw a bright light shining on the sails. Thinking it was morning he started to arise, but the light suddenly disappeared. It was one of the Sound steamers playing its searchlight on us. It revealed the parson sitting at the wheel in the easy chair, with the binnacle light going, calmly steering Safety and apparently as contented as when piloting the good ship Zion on her heavenly

sixty, and then some, and also on account of his uncanny knowledge of the waters between the Whaling City and the Delaware. Next, and a very important member, was the Rev. L. W. Malcolm, a good sailor and worker; the third member was Alton Hubbard, bookkeeper at the Fairhaven Foundry, where the famous Mushroom anchors are made; fourth, the writer, present owner and builder of Safety, who passed for Captain. The fifth dwindles down to the Mascot, a half-grown kitten, close friend of the Commodore's. Some crew. The parson asked the blessings at the meals and offered thanks in the evening for the good day's run and the beautiful weather. Either the "demons of the storm and bad weather" were on vacation, or the presence of the parson scared them away, for never was there such a week of perfect weather as we had on the run.

Our destination was Millington, Md., on the Chester River, which enters into the Chesapeake Bay opposite Baltimore.

The parson had done most of the steering to Point Judith, a task he seemed to enjoy very much; it being done sitting in an easy chair, and instead of being a back-breaking task, was a real pleasure. Safe inside the Breakwater we soon had an appetizing dinner of scallops, potatoes, etc., which was disposed of with great relish. The government has here made a great harbor of refuge. Coming in from the heaving, boisterous Atlantic, we suddenly found ourselves in smooth water. A couple of coasting schooners were anchored, waiting for a favorable wind. A creek runs in at the northwest corner where gasoline, batteries, and other supplies can be had.

Getting under way at 3.45 cleared the harbor, and headed for Watch Hill, W. $\frac{1}{4}$ S. twenty miles distant. The tide being still ahead, kept in shore. Noyes Point abeam at 5.34 and at 7.15 were up with the Light at Watch Hill. On the way we enjoyed

course. No cause for worry, so the captain again settled in his bunk. At one A. M. the watches were changed and the course given W. $\frac{1}{2}$ S., twenty-five miles to the "Middle Ground" or Stratford Shoal Light. As the watch came on deck Faulkner's Light was abeam, distance from Cornfield 12.6, and we now had a stretch of twenty-five miles to steer by compass, but we felt no misgivings as the needle was pointing true. It was a glorious night. The atmosphere was very clear. The heavens were one vast panorama of gleaming jewels. We certainly enjoyed that run.

One after another, the Sound steamers passed us. About
(Continued on page 102)



Watch your lines carefully when passing through the canal locks



After the water flows out of the lock before the gates are opened

Luders Produces a Stock 60-Footer

Most Ambitious Stock Cruiser Yet Proposed, This New 60-Footer Will Fill the Gap between the Small Boat and the Big Motor Yacht

PROBABLY the most ambitious attempt at standardizing among the various yacht works is the production of the Luders Marine Construction Co., of Stamford, Conn., of a 60-foot model that is designed to meet all the requirements of their custom trade and yet standardize the most expensive features so that a boat of reasonable cost may be produced.

This company has had a great deal of experience in building vessels of this size, and with the development of each new model radical improvements became more and more difficult until a point was reached where these boats were all alike in general dimensions, arrangement, etc., and only differed in minor details and selection of the engines.

One of the principal considerations of the design was that it should fit practically all conditions. It must not only be seaworthy for use along the Coast but it must be shallow draft to permit its use around Florida or the more local conditions of Great South Bay. It must also be arranged so that the bridge deck can readily be enclosed so that the boat becomes practical for use where the raw winds of the west coast blow. Its size must not be so extreme that it cannot readily be shipped almost anywhere by steamer. All these conditions have been kept in mind and successfully solved.

A glance at the plans will show the usual smart sheer, bow and stern that advertises the boat as a Luders creation as far off as she can be seen. The wide flaring steamship bow—well calculated to throw off the spray—is still retained, the readily accessible outboard rudder in itself so stout that it practically acts as a guard to prevent damage to the stern should the boat back into a dock or suffer similar mishap.

The draft has been kept to less than 36 inches and yet the hull and keel have all the depth of such able boats as the 60-footers Helen and Kathmar II, designed and built by this concern.

The construction throughout is of the best; oak keel and stem, $1\frac{1}{2}$ -inch thick yellow pine planking, double thick constructed for rigidity above the waterline on steam bent frames 2 inches square and spaced 12 inches apart. Clamp, shelves and bilge stringers are in long lengths of yellow pine, and all the fastenings in these and in the floors and other parts of the structure are with bolts and nuts instead of the

very much less secure method of nails, rivets or screws.

Safety is secured by three double thick water-tight bulkheads, one forward, one amidships and one aft, dividing the boat into four compartments, an almost certain guarantee against sinking should the boat be injured by collision or grounding.

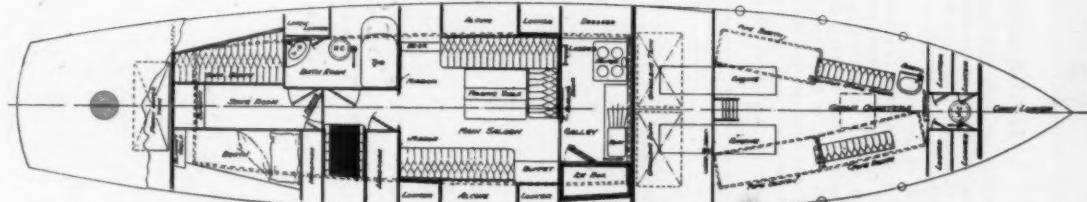
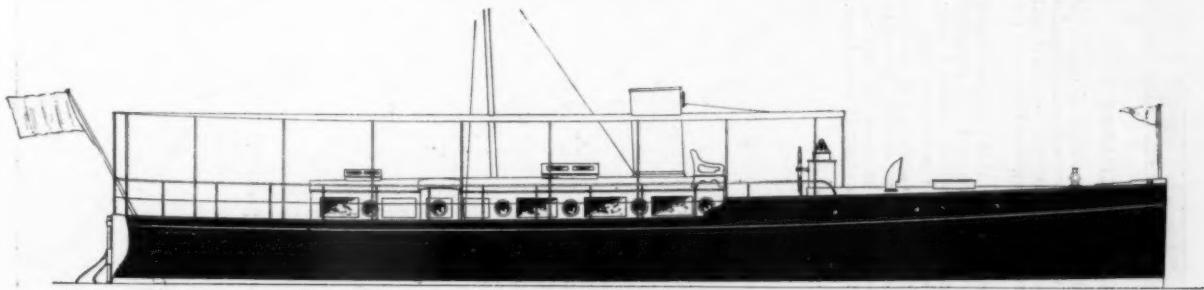
Though more costly, two engines are installed driving twin screws, reducing the depth of water required and insuring immunity from total disablement. The large copper gasoline tank is located right aft of the engine, properly protected from damage, and with all the piping for gasoline short and exposed to constant inspection. The exhaust is through the stern through copper pipes, water cooled and insuring an almost noiseless discharge. With two engines of first class make of the medium-duty type, 50 h.p. each, a speed of 14 m.p.h. will be attained.

While the boat is entirely controlled by one man at the bridge who has the reverse handles spark at throttle controls and steering wheel within easy reach, to keep the boat up properly a crew of three including the cook should be carried and accommodation is provided for this number forward of the engine-room.

A feature of the boat is the complete isolation of the owner's quarters from the part given over to the engine and crew; even the position of the galley is such that the cook may enter here from the deck and prepare breakfast without disturbing the owner's party.

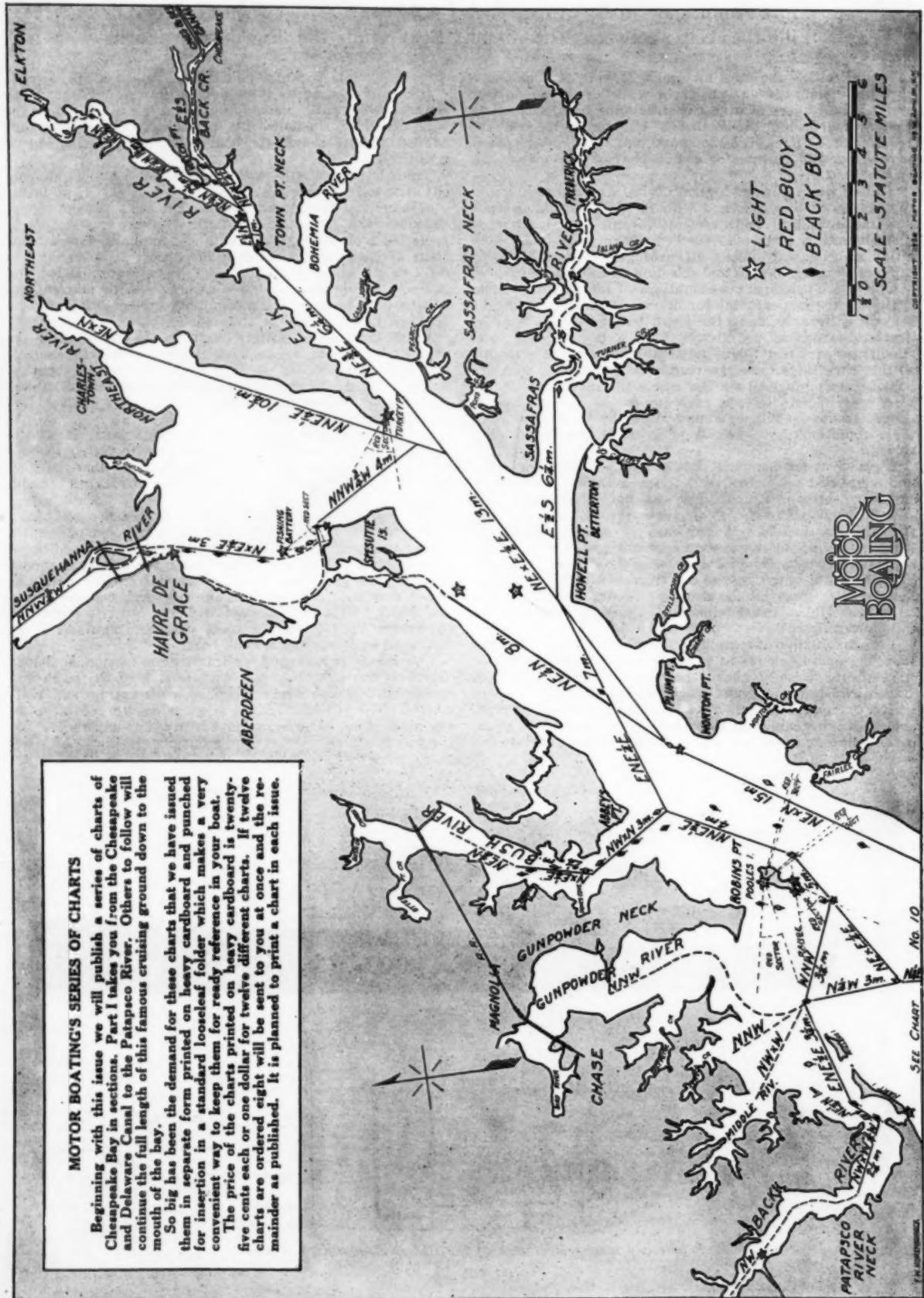
The owner's quarters are located aft in the mahogany trunk cabin, which is illuminated by large fixed plate glass panels and ventilated by large brass air ports; for additional ventilation skylights are located over the principal rooms. The owner's stateroom is aft, reached from the vestibule, which is in turn reached from the side deck companionway and stairs. This arrangement with the owner's room and the saloon separated by the toilet room and vestibule is the last word in privacy in a small boat.

The saloon is arranged with a large extension L shaped divan on one side. On the opposite side of the room is a concealed Pullman berth complete with spring and mattresses. The general finish is in white enamel rubbed to an egg shell gloss. The beams and trim are of mahogany and the upholstery as selected by the owner.



Profile and arrangement plan of the Luders standardized 60-footer

Motor Boatmen's Chart No. 9—Chesapeake Bay, Part I
 For Use with Coast and Geodetic Survey Chart No. 1226



MOTOR BOATING'S SERIES OF CHARTS

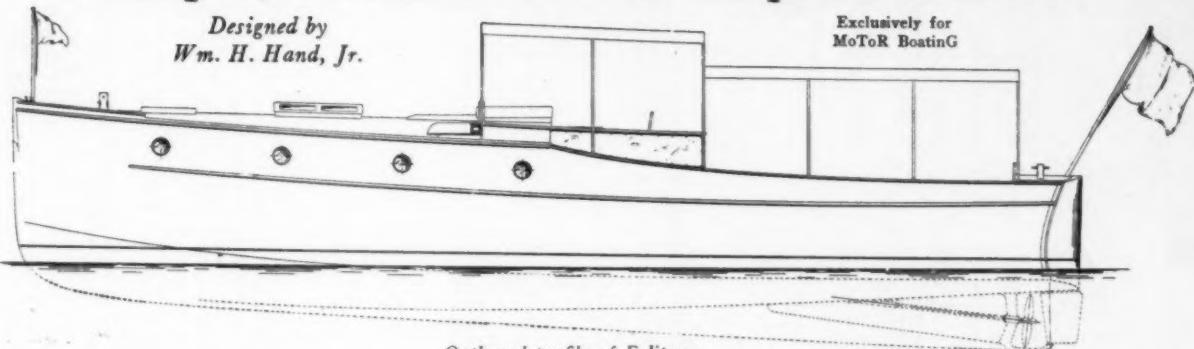
Beginning with this issue we will publish a series of charts of Chesapeake Bay in sections. Part I takes you from the Chesapeake and Delaware Canal to the Patapsco River. Others to follow will continue the full length of this famous cruising ground down to the mouth of the bay.

So big has been the demand for these charts that we have issued them in separate form printed on heavy cardboard and punched for insertion in a standard looseleaf folder which makes a very convenient way to keep them for ready reference in your boat. The price of the charts printed on heavy cardboard is twenty-five cents each or one dollar for twelve different charts. If twelve charts are ordered eight will be sent to you at once and the remainder as published. It is planned to print a chart in each issue.

Eclipse, a Hand 40-Foot Express Cruiser

Designed by
Wm. H. Hand, Jr.

Exclusively for
MoToR BoatinG



Outboard profile of Eclipse

NOW all you speed motor boatmen, here is your chance. The variety of boats for which we are publishing the plans is complete. We have had little boats, big boats, runabouts, cruisers, and auxiliaries. Here is a brand new one. Eclipse is an express cruiser of the utmost refinement and most up-to-the-minute features. In 40 feet of length Mr. Hand has succeeded in securing every desirable advantage of the much larger boats. Complete accommodations are provided for cruising with four or more persons and the necessary facilities are ample to care for the full personnel with every comfort.

This boat follows along the lines developed by the famous express cruiser Flyaway III. This cruiser established many enviable records in competitions of all sorts. Long-distance races had no terrors for it. Inland waters, or the open Atlantic, it was all the same. Flyaway was always on deck and most generally the first to finish.

Our cruiser this month follows the conventional V-bottom practice developed by Mr. Hand. The sections have been designed to give the maximum of speed and seaworthiness for the minimum power installed. Working on the theory that the outside deck and cockpit space is the portion of the boat which the majority of boatmen use the most, this design has been particularly developed to allow the utmost possible outdoor space. The interior has not been neglected, however, in order to accomplish this. The arrangement inside is as follows: Storage for lines and deck gear is arranged in the forepeak. A roomy lavatory comes next with a pair of good sizable wardrobe closets close by. The cabin proper is fitted with a pair of sliding transom berths which afford ample sleeping accommodation. Some more closets are provided just adjacent to the galley compartment. This is completely equipped with stove, refrigerator, sink, dishracks and all necessary fittings.

This Is What Mr. Hand Says About Eclipse

Here is a safe, sane, and wholesome motor cruiser of a type which has been developed to a high degree of efficiency, and is exceedingly popular. The predecessor of this V-Bottom is the old "Flyaway III," probably the first real express cruiser, and a boat responsible for a marked change in the development of the express cruiser type.

The arrangement is one which seems to use the space to best advantage. The cabin provides sleeping accommodations for four with adequate toilet and galley. The cockpit is large, and there is plenty of deck space. The average motor boat user spends at least 75 per cent. of total time on board in cockpit or on deck, therefore, it is believed that sufficient deck space and cockpit room is quite as desirable as the maximum sleeping accommodations, something which is frequently overlooked in planning small cruisers.

With the power plant designated, this little cruiser will maintain a speed in excess of twenty miles, and be able to go anywhere along the coast in the summer months quite as safely, and far faster, than the average boat.

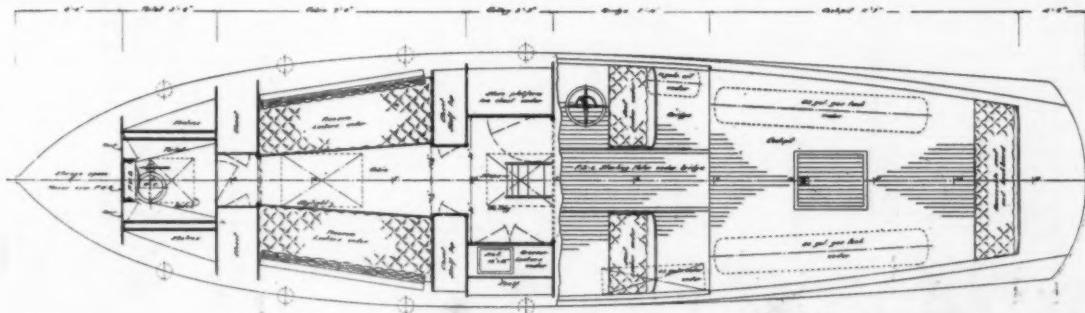
WM. H. HAND, JR.

The motor selected for this boat is a model F. S. six-cylinder Sterling which is compactly installed under the bridge-deck floor and just aft of the after-cabin bulkhead. Plenty of room is provided on all sides in order to allow of easy access to all parts of the motor and also to give it some breathing space. A motor which is hidden away in an inaccessible corner is neglected and when it is treated this way its usefulness is soon impaired or destroyed altogether.

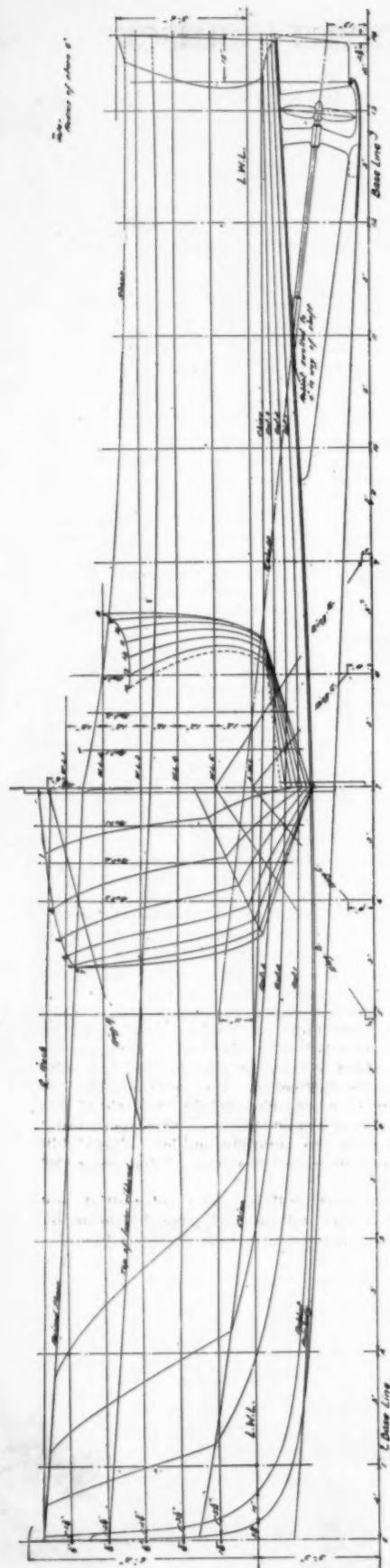
Roomy seats are provided on each side of the bridge-deck space for the operator and some guests to remain comfortably seated while the boat is under way, and a further seat the full width of the after end of the cockpit makes an ideal place to sit and snooze while the boat drives along at a merry clip.

Again the question arises whether the construction of a boat of this size can be successfully undertaken by the amateur builder. It is our opinion that this boat is just a little too large for any but a competent and thoroughly skilled mechanic. Forty feet does not sound very big but when it is necessary to fasten forty feet of planking up and down the lengths of a boat of this size it seems to be more nearly 400 feet long. And rivets; there is no end to the number required. A properly equipped boat shop with several good mechanics can make short work of a job of this kind but the poorly equipped amateur builder had better pass this one up. Of course, there are a few amateur builders who are in a distinct class by themselves. Men with a hobby for boat-building and construction, who delight in work of this kind and play at it at every opportunity. These men cannot be properly classed with the amateur builder. Their skill and proficiency is in many cases in excess of that possessed by professional workers.

The frame of this boat will be most substantial and rugged. Steam-bent frames will be used, spaced nine inches on centers with heavy planking to finish not less than one



Arrangement plan for 40-foot Hand Express Cruiser Eclipse



Lines of Eclipse, the 40-foot Hand Express Cruiser

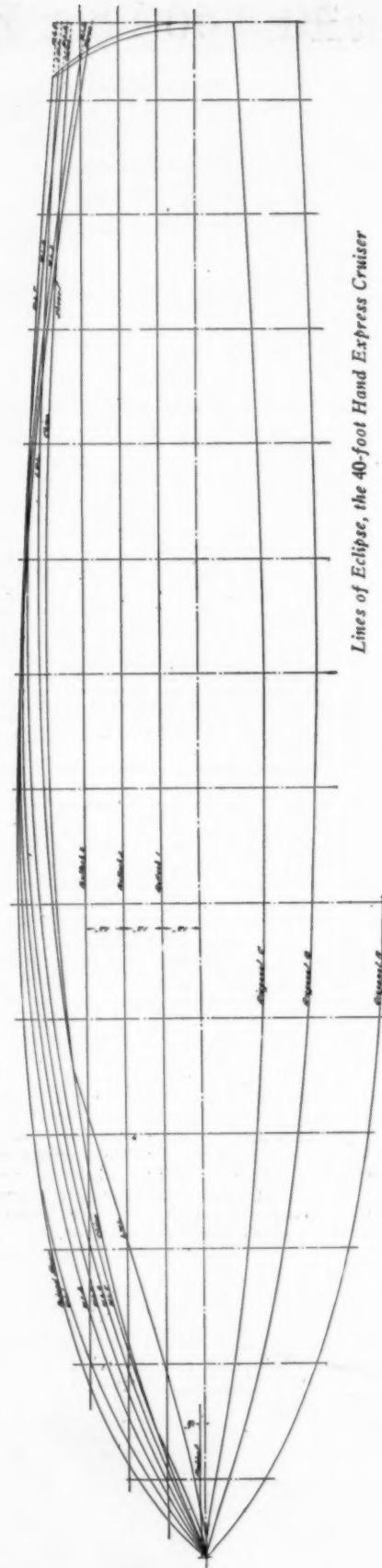
inch. Mahogany will be used for trim both inside and out. Altogether the boat will be most attractive. Complete specifications for the Express Cruiser Eclipse follow:

A V-Bottom Express Cruiser

Designed by Wm. H. Hand, Jr., N.A.

Dimensions

Length overall, 40 feet; beam, extreme, 9 feet, 6 inches; draft, 3 feet, $\frac{1}{2}$ inch.



General Conditions

The boat is to be built under a suitable housing. All the materials and manufactured articles, and articles of construction, of whatever kind and in every department, are to be the best in quality for their respective purposes.

All workmanship must be of the first class and the best, and the whole executed under the direction and to the satisfaction of the owner, or his duly authorized representative. Work not shown by the drawings, or specified herein, but which is usual and necessary for a boat of this type, is to be done by the builder without extra charge.

Frame

Keel: To be of white oak, sanded 3 inches and molded as shown. This part may be in two pieces, properly scarphed.

Section of keel in way of shaft to be swelled to 4 inches.

Stem: To be of oak or hackmatack, scarphed and bolted as indicated. To be rabbeded for planking and bearded to carry out all lines of same above L.W.L., except at head, which is to be finished square, with a suitable cast brass stem band extending over top of head to a point about 2 feet aft of fore end of waterline, and neatly filed to show as narrow face as practical at and near L.W.L. Stem to be sanded 3 inches and molded as indicated.

Apron: To be of Georgia pine $2\frac{1}{2}$ inches by 5 inches, in one piece, securely fastened to keel.

Stern: The transom will be double planked of white cedar, total thickness 1 inch, with white lead between bent to form on 6-foot radius. It will be supported in center by indicated hackmatack knee and reinforced at sides and bottom with

Note—All dimensions in this table are given in feet, inches and eighths to the outside of planking. All heights are given above Base Line. Buttocks and water lines spaced 12" apart. Base Line 3' 3" below L.W.L. Spacing of diagonals and station lines per Line Plan. Check station by fairbody

Complete table of offsets for Eclipse, the 40-foot Hand Express Cruiser

suitable oak back rabbet pieces for planking fastenings. Planking to run by transom and be properly finished with angle brass trim.

Frames: All frames to be of white oak, steam bent, spaced 9 inches on centers. Those under motor beds to be $1\frac{3}{4} \times 1\frac{3}{4}$ inches, all others to be $1\frac{1}{4} \times 1\frac{1}{4}$ inches. Heels of frames to be boxed into apron. All floor timbers to be sided the same as frames and carefully fitted on top of frames, and to be securely fastened to keel with $\frac{1}{4}$ -inch galvanized bolts fitted with nuts and washers through heavy floors and $\frac{3}{8}$ -inch bolts through light floors. Frames to have the required filler pieces of white pine above and below chines as shown in cross-section plans. Frames to be fastened to chine with $3/16$ -inch or No. 7 copper wire nails and where the bottom edge of side planking and the top edge of bottom planking join the chines there will be a No. 9 copper wire nail through planking, chine and frame. All copper fastenings to be properly riveted over copper burrs. There will be suitable limbers under all floors to lead bilge water to pump.

Chines: To be of Georgia pine, in two parts, as indicated by plan. Both parts to run full length of hull. Inner members to be $1\frac{1}{4} \times 5$ inches, set as shown and properly beveled to receive planking and riveted through all frames with suitable copper rivets. Outer member of Georgia pine $1\frac{1}{2} \times 2\frac{1}{4}$ inches, to form square caulking seam, fastened securely through inner member and bent frames with copper rivets as above specified.

Clamps: Main clamps to be of Georgia or Oregon pine $1\frac{1}{2}$ x 4 inches, set as shown, and extending from stem to stern. To be riveted through each frame with two No. 7 copper wire nails. Clamps to be worked under beams of deck in forward raised freeboard, to be of Georgia pine, $1\frac{1}{2}$ x 4 inches, riveted through the head of each frame. There will be shelf clamps worked under beams in raised freeboard of Georgia pine $1\frac{1}{2}$ x 3 inches.

Deck Beams: All beams to be of white oak, sawn to form. Main deck beams in bridge and aft decks to be $1\frac{1}{4} \times 2\frac{1}{2}$ inches. Raised freeboard beams, $1\frac{1}{8} \times 2\frac{1}{4}$ -inch oak. Cockpit beams, $1\frac{1}{8} \times 2\frac{1}{2}$ inches.

Motor Beds: To be of $2\frac{1}{2}$ -inch oak or Georgia pine, set and

bolted in accordance with plan. All parts to be carefully and securely fitted together as indicated and all bolts riveted through frames over heavy washers. Motors to be bolted to beds with galvanized bolts extending through fore and aft beds with nuts on under side.

Frame in General: All exposed edges of stringers, clamps, frames, chines, deck beams, etc., to be neatly finished with chamfered edges. All parts to be carefully fitted to bear evenly and very securely fastened as specified.

Planking

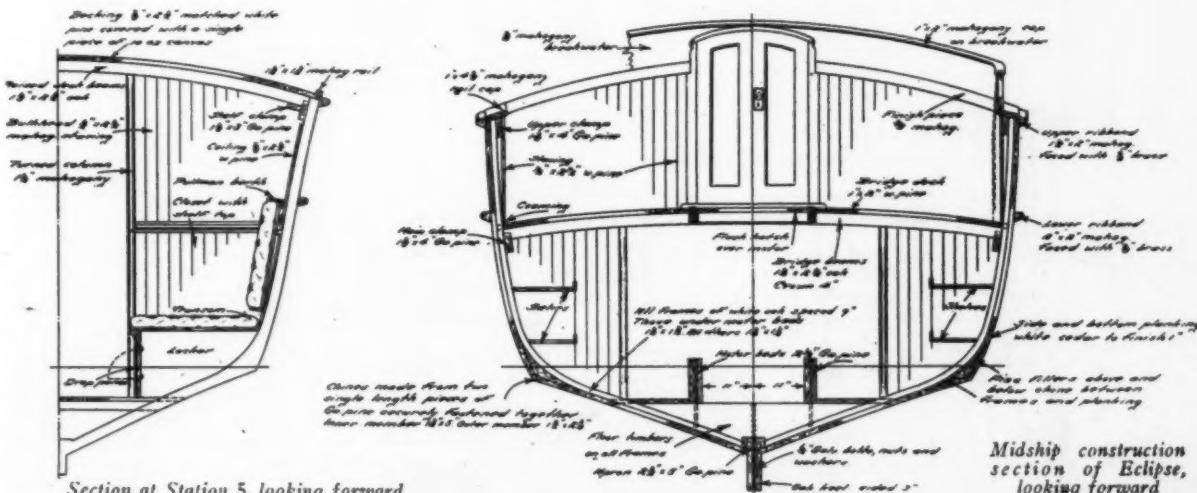
The hull will be planked with white cedar to finish not less than 1 inch. To be fastened with No. 9 copper wire nails riveted over copper burrs. All outside fastenings will be properly countersunk and bunged.

Decking

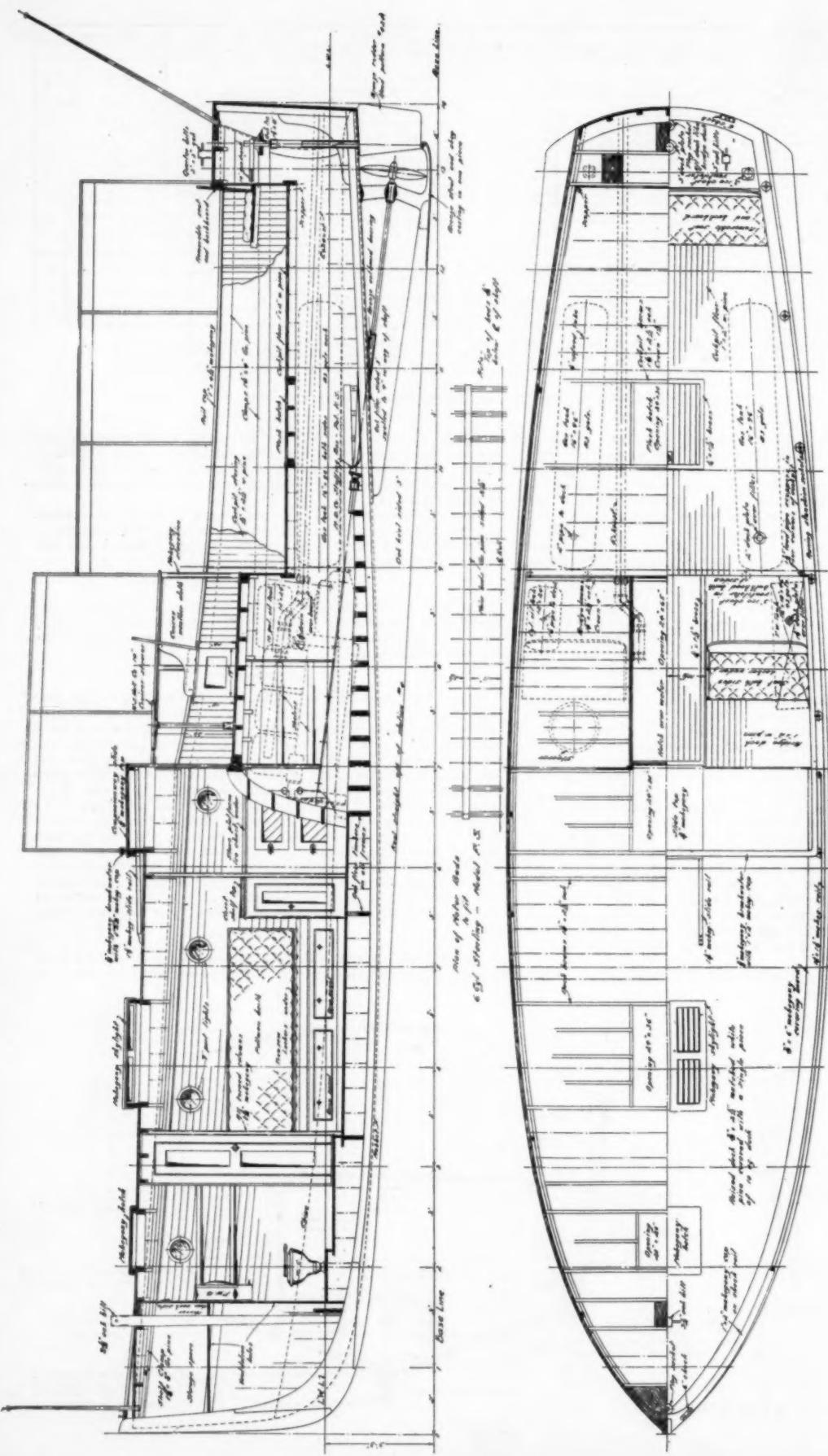
Raised freeboard deck to be $\frac{3}{8} \times 2\frac{1}{4}$ inches matched white pine with chamfered lower edges, fastened into deck beams with galvanized boat nails with heads let in, smoothly planed and bung fastened and entire deck, except plank sheers, covered with a single piece of 10-ounce duck, laid in paint or marine glue and smoothed down into place. Edges to be hauled down over sides and neatly tacked where same will be covered by plank sheers when in position. Flaps to be left around all openings, to be turned up on inner side of coamings when in position. Bridge deck and cockpit floor to be of white pine, 1×2 inches, with bunged fastenings. Seams to be caulked with cotton and properly filled with marine glue seam filler. Decks to be finished in varnish. Plank sheers in raised deck to be of mahogany, $\frac{7}{8} \times 6$ inches. There will be a scupper of $1\frac{1}{2}$ -inch lead pipe in each corner of cockpit. Suitable leather valves to be fitted over outboard ends.

Deck Joinerwork

Chock Rails. There will be a mahogany chock rail or foot-rail on forward raised deck as indicated by plans. Same to be



Section at Station 5, looking forward



Inboard profile, deck and beam plan for Eclipse, the 40-foot Hand Express Cruiser

formed of $1\frac{1}{2}$ -inch mahogany $2\frac{1}{2}$ inches high on forward end tapered to $\frac{1}{4}$ inches, as shown. A neat mahogany cap $1\tfrac{1}{2}$ inches to be rabbed over chock rail at forward end as indicated.

formed of $1\frac{1}{2}$ -inch mahogany $2\frac{1}{2}$ inches high on forward end tapered to $\frac{1}{4}$ inches, as shown. A neat mahogany cap 1×2 inches to be rabbed over chock rail at forward end as indicated.

Companionway: To be of sliding type of mahogany. Top to be of $\frac{3}{4}$ inch mahogany with $1\frac{1}{4}$ -inch mahogany slide rails. To be fitted with two neatly paneled mahogany doors fitted in suitable mahogany frame. To be arranged with hinges on outboard edges.

Hatches: There will be a hatch where indicated over inboard motor compartment to match bridge deck. To be arranged with a bound flush Bitts where indicated.

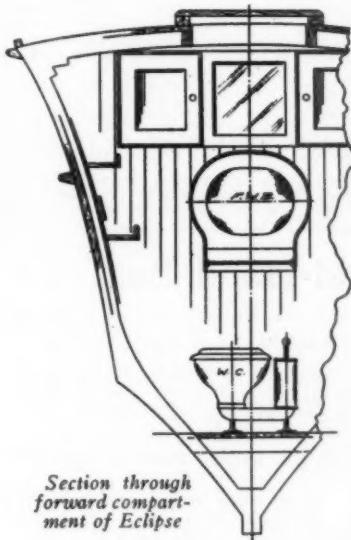
Interior joinerwork

Ceiling: There will be $\frac{3}{4} \times 2\frac{1}{2}$ -inch chamfered white pine ceiling, in forward cabin, toilet room, and galley. There will be no ceiling in the motor compartment. The inner sides of planking, frames, etc., where exposed, will be neatly finished and properly enameled white.

Flooring: All compartments to be floored with rift sawed Georgia pine, $\frac{3}{4} \times 3$ inches, laid on suitable floor bridges. Center sections to be arranged to be removable and flooring around motor to be removable in sections.

Doors: All indicated doors to be strongly made of material to match compartment finish, with neat panels, hung in suitable mahogany casings on suitable brass butts with neat knobs and catches.

Forward Cabin: To be arranged as indicated with a toilet room in forward end, two transoms with closets on forward end



*Section through
forward compart-
ment of Eclipse*

Food compartment to be of white spruce finished in shellac. Suitable drain of $\frac{1}{2}$ -inch lead pipe from ice compartment arranged to lead directly overboard about on painted waterline.

Motor Room: To be arranged as indicated under bridge deck with fresh-water tank on port side and cylinder oil tank on starboard side.

Steps: Steps to forward cabin to be of mahogany with rubber treads and nosings.

Miscellaneous: All removable hatches or floor sections to be fitted with suitable brass lifting rings of flush type. The builder will supply and properly fit all necessary hardware of brass, to

will supply and properly fit all necessary hardware of brass, to include door butts, catches, locks, drawer-pulls and all minor items as required and approved. Door-knobs in cabin to be of approved pattern brass.

Awnings: To be as indicated, with stanchions of $\frac{1}{2}$ -inch brass pipe supported by indicated bronze sockets. Awning beams of oak $\frac{3}{4} \times 2\frac{1}{2}$ inches, attached to stanchions by indicated bronze castings. Battens of spruce, $\frac{3}{4} \times 2$ inches. Tops of 8-ounce khaki canvas.

Metal Work

Rudder: To be of manganese bronze, Hand Pattern No. 424. The head of stock will be finished square. A suitable iron emergency tiller will be supplied to properly engage same.

Steering Gear: There will be a chain and sprocket steerer fitted with an 18-inch wheel of proper height, to conform with plan, properly fitted where indicated. Same to be all brass with mahogany wheel rim with usual motor controls. To be properly connected with rudder quadrant by $\frac{3}{8}$ -inch diameter phosphor bronze tiller rope, led over suitable 4-inch sheaves and through suitable guides as required, and fitted with turnbuckles to take up slack.

Strut: To be a bronze casting with a flax-lined bearing.

Outboard Bearing: There will be a bronze

flax-lined bearing as indicated where shaft leaves hull.

Air Ports: To be four 7-inch air ports on each side of raised freeboard. To be of approved make, with hinged part inside of hull, with sleeves projecting through to outside. All metal parts to be neatly polished and fitted in the best manner.

Stuffing Box: There will be a Mechanical Devices Co., Pattern K. S., shaftlog, to fit shaft, or equal, fastened in place securely as indicated.

Guard Trim: The indicated guard rails are to be faced outside with $\frac{3}{8}$ -inch half-oval brass for entire length. The ribband at top of raised freeboard shall be trimmed with half-oval brass, $\frac{3}{8}$ inch.

Hardware: The builder is to supply and properly fit all necessary deck hardware of polished brass, including bow and stern chocks, bow and stern flagstaff sockets, cleats, deck plates, companion locks of approved sizes; and all other minor items necessary to complete the hull in a workmanlike manner.

Motor and Installation

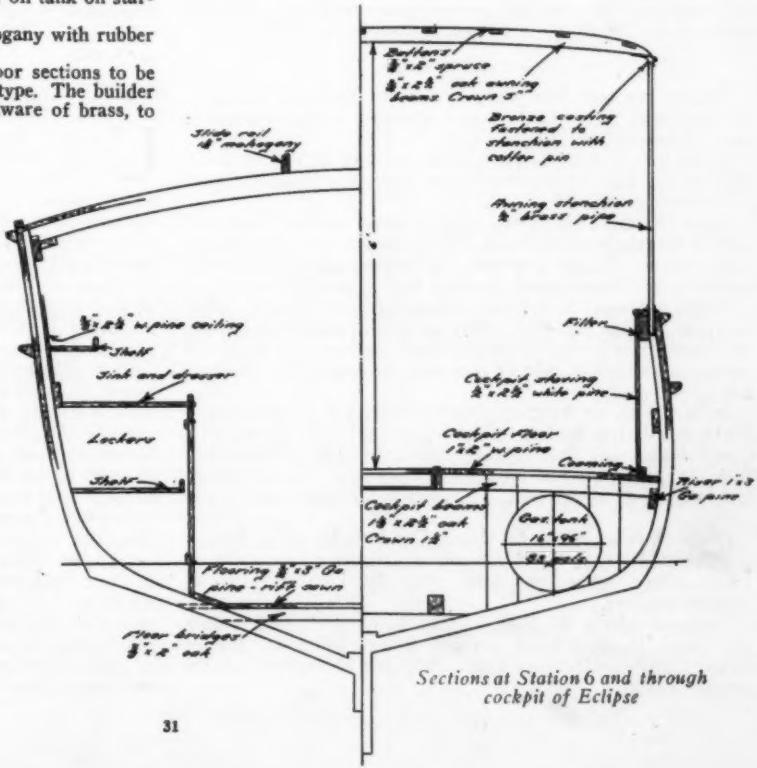
There will be a six-cylinder Model F S Sterling motor, complete with reverse gear, electric starter and generator, shaft, propeller and all parts to make a complete installation. To be properly installed by the builder as will be directed by the architect. All motor controls to be led to the bridge as required, with a suitable brass lever for reverse gear control and all details to be strictly in accordance with the best practice. All water piping shall be of brass, valves and fittings as required. All gasoline will be piped through $\frac{3}{4}$ -inch soft copper tubing with approved valves and strainer as required. To be fed to carburetor by air pressure supplied by pump on motor. The exhaust will be piped from manifold through indicated 3-inch galvanized fittings to indicated flange coupling. From flange coupling through stern the exhaust will be led through 3-inch outside diameter No. 18 copper tubing. Tee next to manifold tapped for 1-inch pipe for circulating water discharge. All circulating water discharges through exhaust. Suitable valves to be supplied and properly fitted. Instruments to be mounted on bulkhead forward of steerer. There will be a Reliance Tachometer, or equal, completely installed.

Plumbing

Gasoline Tanks: Under the cockpit there will be two seamless tinned steel tanks, or equal, 16 inches diameter by 96 inches long, each with three transverse swash plates, standard filling plugs and $\frac{1}{4}$ -inch up-feed-tube and $\frac{1}{8}$ -inch air tap. Tanks to be supported in strong cradles, as indicated. Fillers will be piped to indicated 2-inch brass deck plates.

Water Tank: There will be a fresh-water tank under bridge deck on port side of 18-ounce tin-lined copper, arranged to fill from deck and properly connected to lavatory and galley sink with $\frac{1}{2}$ -inch brass pipe. Tank to have suitable swash plates. Dimensions, 46x12x18 inches deep. Capacity, about 43 gallons.

(Continued on page 84)



SMALL MOTOR BOATS

Their Care, Construction, and Equipment

A Monthly Prize Contest Conducted by Motor Boatmen

Questions Submitted for the September Prize Contest

1. With the next Motor Boat Show scheduled for December of this year what suggestions can you give which will aid exhibitors or the show management in making the Motor Boat Show more valuable and popular with motor boatmen.

Suggested by K. K. K., New York, N. Y.

2. Would it be practical to attach a self-starter to a marine motor now installed in a boat? If so, what are your suggestions for doing so. Suggestions by G. K. E., Newport, R. I.

3. What methods have you devised for protecting food stuffs in your larder? Illustrate with sketches any novel form of container or unusual method of storing.

Suggestions by H. A. H., Baltimore, Md.

Rules for the Prize Contest

ANSWERS to the above questions for the August issue, addressed to the Editor of MoToR BOATING, 119 West 40th St., New York, must be (a) in our hands on or before July 25, (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses.

The name will be withheld and initials used.

QUESTIONS for the next contest must reach us on or before July 25. The Editor reserves the right to make such changes and corrections in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions below, any article or articles sold by an advertiser advertising in the current issue of MoToR BOATING of which the advertised price does not exceed \$25, or a credit of \$25 on any article which sells for more than

that amount. There are three prizes—one for each question—but a contestant need send in an answer to only one if he does not care to answer all.

For answers which we print that do not win a prize we pay space rates.

For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of MoToR BOATING, of which the advertised price does not exceed \$5, or a credit of \$5 on any article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prizes ordered.

How to Determine the Value of a Second-Hand Boat

Desirable Hints on Appraising a Boat So That an Equable Basis of Value May Be Arrived at After a Boat Has Lived a Part of Its Life

Answers to the Following Questions Published in the May Issue

"Give some plan or system for estimating the value of a used boat; even though the original cost may not be known; so that one wishing to buy or sell could arrive at a fair price."

Appraising a Second-Hand Boat

(The Prize-Winning Answer)

THERE are so many points that must be considered when placing a value on a boat that nothing but generalities can be considered. The following results are based on boats built previously to the war and are based on the average cost in boat yards of the medium-priced variety. The proper deductions and increases for other types of yards is given below. The depreciation table is to be used for both hulls and engines. The hull prices do not include machinery cost, but do include the installation charges for same.

Depreciation Table

Twenty per cent first year; 10 per cent next two years; 7 per cent next three years; 5 per cent next five years, and 3 per cent thereafter.

If the hull is built by an amateur deduct 40 per cent. If built by the highest grade of yacht builder, add 40 per cent to following table:

Open (Family) Launches.—Light build, twelve dollars per foot of length. Medium build, fifteen dollars per foot. Heavy build, twenty dollars per foot. If mahogany trimmed, add 15 per cent. If mahogany planked, add 25 per cent.

Medium-Speed Runabouts (Auto Type).—Light build, fourteen dollars per foot. Medium build, seventeen dollars per foot. Heavy build, twenty-three dollars per foot. If mahogany trimmed, add 15 per cent. If mahogany planked, add 25 per cent.

Raised-Deck or Trunk-Cabin Cruisers Up to 36 Feet.—Light build, twenty-five dollars per foot. Medium build, thirty dollars per foot. Heavy build, thirty-five dollars per foot. If mahogany trimmed, add 15 per cent. If all mahogany below, add 25 per cent. If mahogany planked, add 40 per cent.

Cruisers from 36 to 60 Feet.—Light build, sixty dollars per foot. Medium build, seventy dollars per foot. Heavy build, eighty dollars per foot. Add for mahogany as on smaller cruisers.

Cruisers Above 60 Feet.—Light build, sixty-five dollars per foot. Medium build, seventy dollars per foot. Heavy build, eighty dollars per foot. Add for mahogany as for smaller boats.

Express Cruisers and Special Types.—Same as light-built cruisers plus 65 per cent.

For engine cost use catalog price less depreciation. If overhauled by a professional figure for proper depreciation to year that work was done and then add 10 per cent.

If hull has been used in southern waters deduct 15 per cent from final figure. If boat has been in charge of professional crew add 15 per cent. For electric lights add 5 per cent. For awnings add 2 per cent. For steadyng sails add 5 per cent. If galvanized fastened instead of copper, deduct an additional 15 per cent from all figures.

If boat was built without plans deduct an additional 10 per cent.

E. F. B., Paterson, N. J.

Age Must Be Considered

UNDER the precepts in this question we are not supposed to know the original cost of the boat, but this is not an essential fact in estimating the selling value of any vessel, as the original cost is only one item of many in determining this amount. The best way to determine the given value of a boat at any time is to assume a depreciation period for the hull, for the engine and for the equipment, all of which will be different. Then by estimating on the total of this depreciation the value of the boat at any time may be readily found. A good hull of heavy-weight construction can be set down as having a life of twenty-five years. A light-weight hull, if well constructed and properly fastened, should be good for a possible twenty years of service. Now then, knowing the age of the boat in question, it will be possible to figure the number of years she can still continue in service, and knowing the value of a similar hull constructed at the time the estimate is made, we can readily figure our hull depreciation. For example, suppose we have a heavy hull for which we figure the life at twenty-five years. The boat in question is ten years old. The original value is not known, but a hull of this type built at the standard price in the neighboring boat shops would cost \$1,000. The cost may then be divided by each year of the twenty-five-year-life period so that the cost per year of the hull will be \$40. The boat being ten years old, the hull has depreciated \$400 worth, so that the balance value of the hull at time of making the estimate is \$600.

In figuring the value of the engine it will be necessary to fix a lower life period than that of the hull. We can fix the life of the present gasoline engine of a medium-duty type to be about ten years, and for a heavy-duty about fifteen years, which would allow for average care and be figuring on the safe side. On the boat in question we will assume that it has been fitted with a heavy-duty motor and that this motor has been properly overhauled and looked after. The present selling price of this motor may be readily ascertained from builders' catalogs. Assuming this to be \$600, there is a balance lease of life of about five years or one-third the price of the motor. The motor, therefore, on our estimate, can be set down as of a value of \$200.

The third item in the total cost of a boat is the equipment, and this will have a shorter life than either the hull or the engine. Canvas coverings and canvas articles in general are not good for over six years and ropes are good for a much shorter period of time, and other articles of the equipment wear out in from three to ten years of service. A fair estimate of depreciation on equipment would be about eight years. The boat in question being over eight years old, the

original equipment may be written off completely, but there will be a residual balance of equipment value due to replacement. Assuming that these replacements have been of fairly recent date, of which a close estimate may be made by their appearance at the time, we will say for the sake of illustration that the equipment of the boat in general is good for three years more service, and assuming that the value of the equipment for the boat under discussion is \$350, we have the remaining value of three-eighths of that or \$130.

Adding these three items together, therefore, would give the value of the boat from the time of making an estimate of \$930. That would represent, as nearly as possible, the actual value of the boat at the time the sale is to be made, irrespective of her original cost, and by following out the principles herein set down, an equally accurate determination of the value of any boat at any time may be made. In fixing the final selling price, if the owner figures that he is not particularly anxious to part with the boat, it is perfectly allowable to add a profit of about 10 per cent to the above figures, which gives him an inducement to sell the outfit.

G. M. B., Bath, Me.

What to Do With the Exhaust

The Proper Disposition of the Gas and the Noise Are Two Essentials for the Comfort of All on Board

Answers to the Following Question Published in the May Issue

"What method have you adopted or designed for silencing the exhaust on your motor boat? Illustrate with sketches."

Underwater Exhaust is Silent

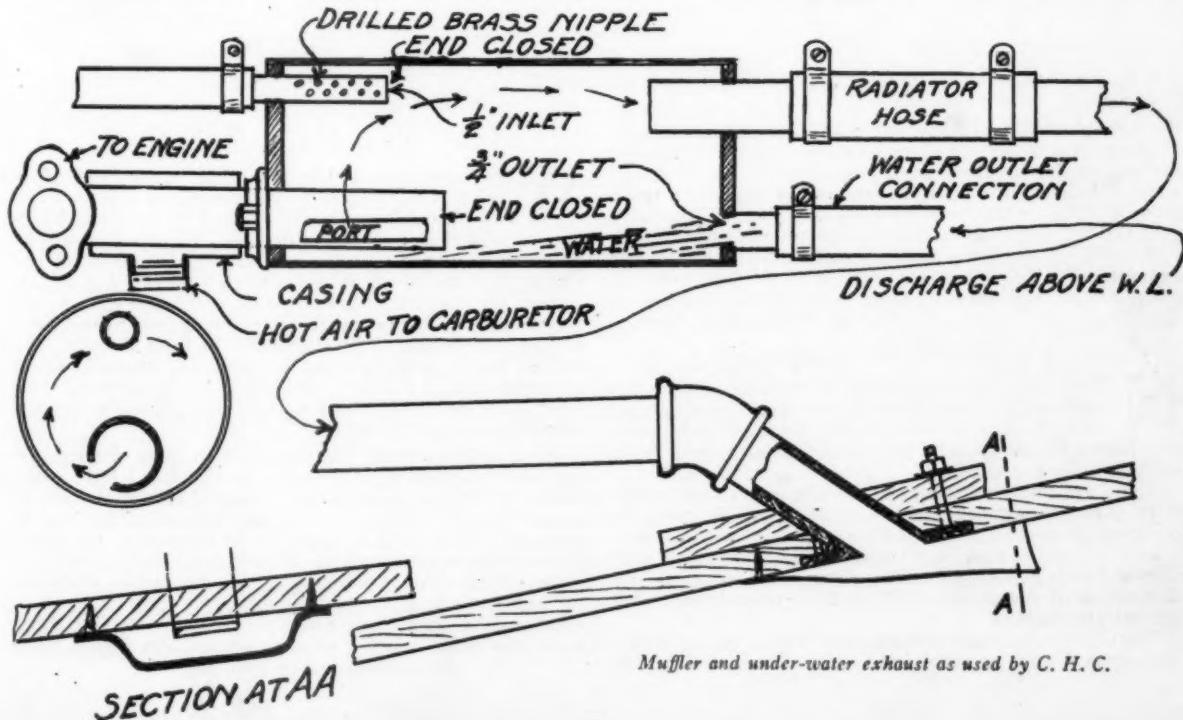
(The Prize-Winning Answer)

WHEN installing the engine in my small cruiser, considerable thought and attention was given to the arrangement for disposing of the exhaust. This item seemed to loom up larger and be of even greater importance because the motor was a double-cylinder, four-cycle, with cranks opposed, and as it was to run at quite a moderate speed, it was feared that the irregular firing would prove disagreeable and annoying even though quite well muffled.

For the above reasons I decided to try an underwater exhaust, although there was considerable doubt in my mind as to just how it would work out, and I certainly did not intend to sacrifice any perfectly good revolutions that should be devoted to turning the propeller for the sake of deadening the exhaust. A study of underwater exhaust devices showed that they were placed anywhere convenient, even under the bottom quite near the engine. I also discovered that in some

installations when so placed, there was produced a knocking on the bottom as the exhaust left the pipe. As there was plenty of room under the cockpit floor for the exhaust, I decided to run the pipe aft nearly to the stern where the boat would be only slightly submerged and owing to the thrust of the propeller a much greater vacuum would be produced by the deflector. I also reasoned that in this position there would be no possibility of knocking as the exhaust would go clear of the hull before striking, and also any escaping gas would be speedily left astern.

Claims were made for some underwater devices, that there was no reduction of power, but the only way to be certain on this point was to prove by providing an above-water outlet that could be opened for testing purposes, or in emergencies, or for starting if this should prove necessary. This outlet was through the side of the boat near the engine and was of the same pipe size, the exhaust being cooled and passing through the expansion chamber first. Many tests were made with this outlet opened and closed; the revolutions



Muffler and under-water exhaust as used by C. H. C.

being carefully checked, and absolutely no difference could be detected in engine speed so the valve was closed and left that way as it was not found necessary or of any advantage to open it for starting or even backing. This exhaust arrangement has proven to be one of the good things on the boat. It is clean, odorless and noiseless, gives no trouble whatever under any condition and the boat always appears to have greater speed because of this very silence. Many have commented on this feature.

An expansion chamber, which was simply a small cylindrical tank in this case, was provided and placed quite near the engine. Special arrangement was provided for spreading the exhaust and bringing it in contact with the cooling water as it was not desired to run hot exhaust through the long pipe under the cockpit floor where it might prove dangerous, and provision was also made for separating the water and passing it through a special outlet through the side of the boat so as to have the regular exhaust pipe free for the purpose intended. This expansion chamber is a home-made affair and the sketch will show plainly how it was made. There are also several devices that can be bought that provide a free, unobstructed passage for the exhaust and also means for cooling the same. In selecting one of these, consideration should be given to the amount of space available, position of connections and outlets.

Near the stern the exhaust passes through the bottom at an angle of about 45 degrees, a special flanged brass casting being provided so that this outlet could be securely bolted

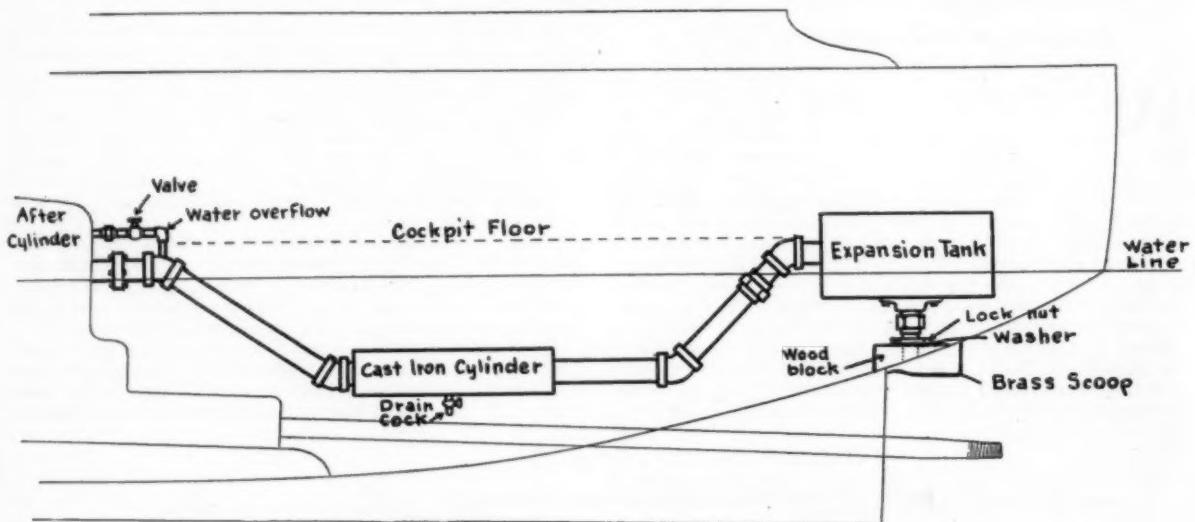
muffler is a cylindrical galvanized iron tank of heavy gauge material such as is regularly made for compressed air, gasoline, etc., having the proper size pipe connections in each end and a small plug on the side. In using this method, it is necessary to run the overflow cooling water into the exhaust pipe. This has the effect of cooling the hot exhaust gas and in connection with the expansion tank, the noise of the explosion is reduced so as not to be noticeable to any extent.

The size of the tank needed may vary according to the size of the motor, but the particular one referred to is about seven inches in diameter and about eighteen inches long. The exhaust pipe is, of course, screwed into each end of the tank and the small plug is turned to the bottom and so placed that it can be removed to drain off water when the boat is laid up for the winter.

The exhaust pipe was put through the planking almost at a right angle to the keel just above the waterline near the stern so that with the boat underway it would be slightly below the surface of the water. This location was such as to cause the exhaust gases to strike against almost solid water so that a vibration was set up which at times was rather annoying. To overcome this, a cap or shield was made to cover the end of the pipe with the opening toward the stern. This formed a sort of pocket and the vibration was stopped.

There is nothing very novel about this arrangement as it is doubtless used on many boats but its low cost and efficiency recommend it as being suited for the average small boat.

A. L. M., New York, N. Y.



through planking, avoiding all possibility of leaks here.

There were a number of underwater exhaust devices on the market, but most of them seemed to be unnecessarily large and clumsy for the work required of them, so a small scoop or deflector was hammered out of a piece of sheet copper; this was about three inches wide and not over an inch high at the open end, the area being about double that of the exhaust pipe. This piece was screwed to the hull over the exhaust outlet and has been doing good work ever since.

C. H. C., Saginaw, Mich.

To Silence the Exhaust

NOTHING is more annoying to most people than the unsilenced exhaust from a motor boat, whether they are on the boat or on the shore. Some motor boatmen may like to hear the steady "put put" of a motor, but a quiet exhaust is far preferable.

There are numerous mufflers and silencers to be bought with variously arranged interiors, all of which are quite practical. However, the only thing needed in most cases is a small expansion tank in the exhaust line which is not only efficient but is also comparatively cheap. The following is a description of this arrangement used for several years with perfect satisfaction.

The motor with which this has been used is four-cylinder, four-cycle, having a 4-inch bore and a 5-inch stroke. The

A Real Quiet Exhaust

WHEN we start in the motor boat game most of us feel that our engine is not running as it should unless we can hear the old exhaust banging and barking like a battleship on target practice. After we have been caught in a couple of fogs, and have had to shut off the power plant frequently in order to pick up our fog signals and we have been tired to death restarting after each listening period, we change our minds and endeavor to make the banging and barking less conspicuous by their absence. The method that I have employed is not by any means original and neither is it a cheap installation, but it certainly does what I desired it to do—make exhaust noises as near a minus quantity as possible.

Most boatmen claim that in order to quiet the exhaust you must sacrifice a great deal of power, but I have often wondered if their remarks were founded on actual facts or merely guesses. When this system was installed the boat in question had a 10 h.p. two-cylinder, two-port, two-cycle Lathrop for a power plant. Bore 5 3/16 inches, stroke 5 inches. Had a direct-driven propeller (22 inches diameter, 18 inches pitch, Hyde turbine type), no reverse gear or clutch, which turned 452 r.p.m. maximum. After installing a reverse gear and this exhaust system, she turned up a

(Continued on page 88)

To Refinish a Worn Bearing

Opinions on Putting a Worn Bearing Back Into Service in the Simplest Possible Manner

Answers to the Following Question Published in the May Issue

"What do you do with worn bearings (crankshaft and connecting rod), both split and solid types in babbitt or bronze, and how do you manage to use them again with good results?"

Grind in Worn Bearings

(The Prize-Winning Answer)

WEAR in its bearings is the first sign of deterioration in a motor or any other machinery. This wear is nothing serious. It is to be expected, but if neglected serious results will follow. A reasonable amount of slack which has worn into a well-fitted bearing needs no other attention than the removal of shims to secure the proper adjustment. It is the bearing badly worn from continued neglect or abuse that requires expert attention to restore its usefulness.

Split bearings in either babbitt or bronze may be refitted as long as there is sufficient metal to withstand operating pressure. Bearings badly cut or burned from operating without lubrication are worthless and it is a waste of time to attempt to use them. Get new ones.

In many types of two-cycle motors it is possible to interchange the bearing halves, thus obtaining a top half bearing which has received but little wear. In this type motor practically all the wear is on the top half bearing and the cap half remains as when fitted. This is due to the operating cycle of the motor which keeps a constant pressure on the top bearing surface.

Old bearings which have been run for a long time have their surface pounded full of small particles of foreign mat-



Lapping tools, scraper and repaired bearing as proposed by A. L. M.



Three cornered scraper

ter. This surface is very hard and crystallized from the continual pounding of the explosions. Such a surface is very hard on the crankshaft and should not be allowed to remain. It is generally conceded that the open pored dull surface having a velvety appearance is the proper finish for a soft metal bearing and admits of much better lubrication than the hard gloss or glazed surface.

The usual method of refitting worn bearings is to blue and scrape them until the desired fit and surface is obtained. This requires much patience and is no job for the amateur. Scraping in a bearing is a slow and tedious process, the resulting fit being in direct proportion to the skill and temperament of the mechanic.

There is a bearing grinding compound on the market that will produce a better fit in amateur hands than could be expected of the average mechanic by the scraping process. This compound is a dry powder to be mixed with medium lubrication oil as used. The process is as follows:

Rough scrape bearing until the shaft bottoms, using the compound instead of Prussian Blue. It assists materially in smoothing down the high spots at each point and facilitates

the removal of sufficient metal to quickly bottom the bearing. Shim up the bearing so that when set up the shaft will just turn over.

Mix the compound to the consistency of a thick paste with medium motor oil; mixing only as used.

Apply the paste to the entire surface of the bearing and add a few drops of oil. Bolt up the cap so that the shaft will turn easily and rock the shaft or bearing several times and readjust the cap to take up any slack that has been ground out. Continue grinding for two or three minutes, taking up the slack as the bearing works in.

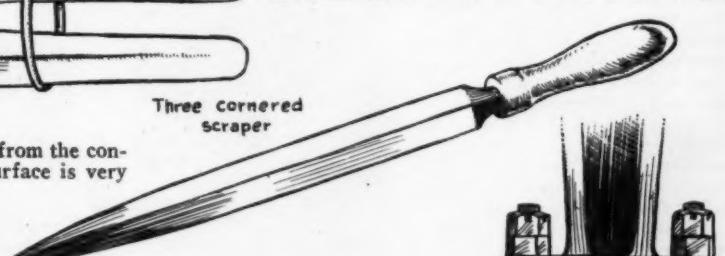
Clean and examine bearing. If the gray velvety surface has not developed over the entire surface of the bearing, take down the high spots with the scraper and regrind as above. One to three applications will usually produce a bearing 85 to 100 per cent perfect, depending upon the degree of the rough scraping.

Remove all possible of the compound and assemble with oil exactly as you would an ordinary take-up job. Do not set up as tight as a scraped-in bearing as there are no high spots to wear down.

This compound is highly soluble in oil and can do no harm if a little is left in the bearing. In an excess of oil it quickly dissolves, which destroys its nature and it is impossible for it to have a grinding effect on any part of the motor. The manufacturers guarantee it to be free from abrasives or chemicals injurious to shaft or any part of the motor if properly applied with sufficient oil.

It is not customary to attempt to refit solid bearings for obvious reasons, but if you must do it the following suggestions may help. With a hack-saw make a cross cut across the top of the babbitt or bronze, and very carefully force the bearing together, thus reducing its size. If the motor construction allows, wrap the cut bearing with thin shim stock and force it in place. This method is least apt to distort the babbitt. The joint may be

veed out from the outside and soldered or burned together. Bronze may be brazed. Wrap the bearing with shim stock to restore the original size. The shim stock should be of a thickness to go



once around the outside of the bearing with the ends butted but not lapped. Carefully solder the butt, which should not be over the cut. With a fine file remove any surplus solder and fit bearing into its recess. In fitting proceed as with a split bearing, working it on from end with great care to avoid getting the bearing too large.

Keep the bearings in good condition and barring accidents the long life and satisfactory operation of the motor is assured.

W. B. M., Newburgh, N. Y.

(Continued on page 60)

Take a Surf Board with You on Your Cruise

An Entirely New Sport Connected with Motor Boating Made Possible by the Discovery of a New Wood Which Is Lighter Than Cork

COASTING at lightning speed before the crest of a wave is a thrilling sport no longer confined to the natives of the Hawaiian Islands. We're beginning to know the excitement of it ourselves with the introduction to our beaches of the new surf boards made of a wood so light and buoyant that anyone could handle them.

We used to go down to the beach and take a dip and then sit around the sand wondering what to do next, but with Balsa Buoyants there is plenty to do and loads of fun doing it.

There's hardly no quitting once one has experienced the exhilarating rush in toward shore. There is a knack about riding one of these boards that everyone has to find out for himself.

Balsa wood is so buoyant, much more even than cork, that you have to keep down toward the back of it and then jump forward before the crest of the wave keeping the front of the board pointing somewhat upward. Of course, you may get an occasional spill if the board ducks its nose down in the water. Learning the little knacks of handling the boards, judging the waves, etc., is where the fun comes in. Pretty soon you will be betting the other person a box of candy against a good cigar that you will beat her in to shore—and she is liable to fool you at that.

The surf board is about the height of a person and made in the shape of a fish with all sorts of brilliant colors on the canvas that covers the Balsa wood of which it is made. This board only weighs about ten pounds so that when you are not using it for surf coasting, you can carry it around easily, or it may be used for a swimming float. A smaller size is made for the youngsters, and lots of them are using these to learn to swim.

If you do not want to ride the surf or if there isn't any surf to ride, you will find it mighty comfortable loafing along in a Chair Float. It beats sitting on the hot sand of the beach and you can paddle it around wherever you want to be and keep cool by drifting along.

No one has yet tried the game of Bridge, with a table spread over the arms of four of these chairs—a pack of celluloid cards; but there is no reason why it cannot be done, you might even be able to get to the three mile limit. At any rate you can smoke and take it easy. If by chance you can't



Waiting for a big one to start the race for shore

swim, you are still perfectly safe in any depth of water as one of these chairs would hold up the heaviest person.

Aquaplaning behind a fast moving motor boat is not an entirely new sport but the Balsaplane is doing a lot to make it popular with motor boating enthusiasts for the diversion which it gives to the day's run. Balancing yourself on the back of a Balsaplane, when a motor boat that is towing you makes a sharp turn and tries to tip you off, is not exactly as easy as standing on the street; but it is a great deal more fun, with the thrill of the water rushing past you, the quick shifting of balance that you will find necessary, and sometimes a ducking is the penalty you pay if you are not quick enough.

These buoys are becoming as popular on the various beaches this summer as they were in Florida last winter.

As everybody can swim with Balsa Buoyants, they are given to developing many new and always enjoyable water sports.

Numerous ways are suggested in which to use these various devices. More attention will be paid to water sports than previously. These devices are easily carried on board and quickly gotten out for the sports.



Buried under the smother of foam the surf rider can enjoy his swim to the utmost. Delightful new ways of enjoying the water are opened up to owners of Balsa Buoyants



Kirk W. Dyer
President



Thomas H. Travis
Vice-President
Manager of Production

TWENTY-two years ago, in a barn at Cromwell, Conn., the first Frisbie engines were built. At that time they built not only marine engines but the Frisbie-Heft automobile as well. About eighteen years ago the firm was moved to Middletown, and their first valve-in-head marine engine brought out. They were one of the first exponents of that type of valve con-

Friendly Frisbie Family

New Board of Directors and Officers of the Frisbie Motor Co., Middletown, Conn., is a combination of remarkable strength

which department of the business one has occasion to deal with, the head of that department is a stockholder in the business, not only one who can speak with authority but, furthermore, one who is naturally interested in seeing that proper service be given to all. All of his associates are behind Mr. Gibb solidly in his belief and aim, "Real Service to All."



Wm. E. Gibb
Vice-Pres.
Manager of
Sales



Frank A. Brassill
Secretary



Minn S. Cornell, Jr.
Treasurer

struction, and since that time have manufactured nothing but valve-in-head engines. A factory on the present site was occupied in 1907. Frisbie valve-in-head marine engines are to-day universally known. Their distributing organization is very complete and numbers the majority of the better distributors in the country.

The new organization makes an ideal one in this way, no matter

The Way We Would Do It

Can you recommend a substantial type of mooring buoy? My cruiser is moored in a river where the currents are very strong. We have difficulties on account of the buoys being pulled under the surface. Any suggestions will be appreciated.—A. S., Poughkeepsie, N. Y.

A most substantial mooring buoy can be fashioned out of a large oil barrel or similar container. On account of its watertightness and large volume it has ample displacement to carry a long length of chain and to hold itself well out of the water. It is prepared by boring a hole in the heads large enough to take a length of 2½-inch galvanized pipe. This is threaded and a locknut is pulled up tight against a rubber gasket at each end. A water-tight passage through the barrel is thus provided through which the mooring chain runs. A large ring is shackled into the free end and serves to prevent the chain slipping through and at the same time affords a convenient place to make fast.

* * *

Do you know of any firm which manufactures a collapsible seat which would be suitable for the wheelsman when the boat is underway and will not take up much room when not in use? C. D., Los Angeles, Cal.

No one has undertaken to manufacture a device of the kind you wish, but it is such a simple matter that it probably is not worth anybody's time to attempt to make them for sale. As our sketch shows a few standard pipe fittings assembled into a convenient size rectangle, supported by an upright member on the free side is all that is required. A canvas laced in between the pipe, completes a most serviceable seat.

* * *

It was my misfortune to strike a submerged obstruction causing a noticeable bend in the exposed propeller shaft. How can this be straightened out, as I would like to save the shaft, if possible?—C. R. R., New Haven, Conn.

It is an unfortunate occurrence to bend the propeller shaft. Generally in a case of this kind the metal of the shaft has been stressed beyond the elastic limit and a permanent deformation has taken place. It is very difficult to remove this. However, we can try. Presumably there are no lathes or other elaborate equipment available so we can improvise a substitute. A jack operating against the injured shaft can be employed to bend it back to normal, as shown in the sketch. A pair of V-blocks of wood equipped with wire nails for bearings are useful for rolling the shaft and can be used as bearings for lighter shafting in case it is decided to bend it by means of a lever, as indicated. These can be made of steel angle sections if desired. It will be necessary to revolve the shaft and straighten it a little at a time repeatedly, before the job is finally considered satisfactory.

* * *

The stuffing box lag screws have lost their heads through corrosion and I will have to get them out to replace them with new bolts. I cannot get a hold of the ends with a wrench and would like a suggestion as to how to get these old bolts out.—J. C. B., Havre de Grace, Md.

This is a task which requires care and patience. In most cases it would be better not to attempt to remove the bolts, but to get around the difficulty in another way. It may be possible to drill a hole into the end of the broken screw. It will be well to construct a guide of hardwood and clamp it around the propeller shaft; by the use of a ratchet brace and a good sharp drill it will be possible to keep the drill in alignment with the bolt and drill a sizeable hole. A special

tap called the E-Z-Out is made with a coarse left-hand thread; this can be inserted in the hole and an attempt made to turn out the shell. And since this tool is made of a very tough steel it is probable you will be successful. If not it will be necessary to remove the entire bolt by continuing the drilling.

* * *

In overhauling my motor this spring I discovered that the water jacket was badly rusted on the inside and that there were heavy deposits of sediment in the water spaces. How can this best be removed, as I find the cooling of the motor is interfered with?—L. M., Boston, Mass.

The clogging up of the water jacket space is quite common. Unless the trouble is present in an aggravated form, such as yours, it is not necessary to clean out every last particle of rust which may be present. The simplest method we know of is to take a stiff wire and poke around inside the water jacket and remove as much as possible of the deposit by this means. Blow out the dust by means of air pressure or a stream of water. After removing the heaviest accumulation in this way fill the jacket with a 2 or 3 per cent solution of hydrofluoric acid, and allow it to stand for 2 to 4 hours, depending on the amount of deposit. The acid will free the metal from all rust and other impurities but will not affect the metal. This treatment should be followed by a lime water bath to neutralize the acid and then a clean water bath to restore all parts. There are protective paints made for use on boilers and tanks which should be equally good for water jackets.

* * *

We have just completed a new cruiser and find that the limber holes through the frames were forgotten. While it will do no harm it means that we can never get all the bilge water out of the boat as it is now. Do you know of any way in which this condition can be remedied?—W. S. S., Jacksonville, Fla.

There are several ways in which the forgotten limbers can be introduced after a boat is completed. The simplest method is to use an auger bit and ratchet brace and simply drill a hole in each frame as required. Most boats, however, are not built to make this possible. Quarters are crowded and working space is necessary. Under such locations as the motor it is practically impossible to bore a hole by ordinary means. An improvised device which has advantages can be made as follows: A short length of steel tubing is prepared and saw teeth are filed on one end, as shown. A threaded pipe is drilled to take the end of a long substantial bolt. This device closes up like a turnbuckle and when in operation the head of the bolt it held stationary and the tube rotated by means of a little bar. As the tube is unscrewed from the bolt it acts like a screw jack and forces the cutter teeth through the frame, leaving a clean hole. After the hole is drilled through, a compass saw, with the handle reversed, can be used to complete the cut through the inner side of the planking.

* * *

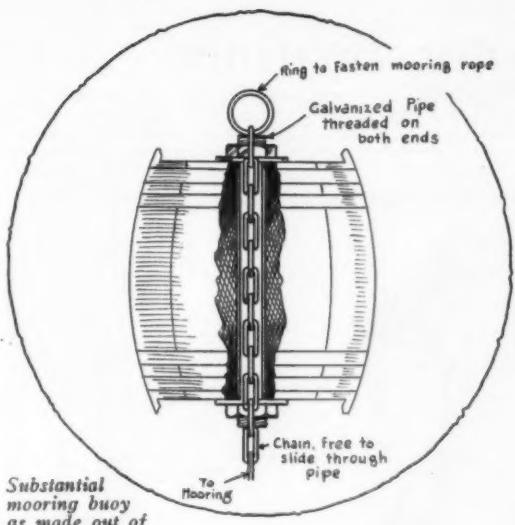
My deck has considerable crown up forward where the logical stowing place for the anchor is. What sort of chocks are used to prevent an anchor from sliding off in a seaway in a case like mine?—W. E. S., Barcelona, Spain.

Our sketch shows a pair of wood blocks so placed and shaped to provide a snug support for the heel of the anchor fluke. The stock is placed in a pair of notched chocks, as shown. A hasp hinge may be used to lock the anchor in place to prevent theft during times when the boat is left unguarded. Depending somewhat upon the type of anchors which you are using, it will be necessary to modify the work to suit.

MY IDEAL MOTOR HOUSEBOAT CONTEST

Our next series of amateur designs will be called "My Ideal Motor Houseboat." The conditions for this contest will be the same as former contests. Plans properly worked out may be submitted by any amateur designer previous to October 1, 1920. These should consist of outboard and inboard profiles, arrangement plans, lines, table of offsets, construction details and such other information as may be required.

A description of about 1,000 words setting forth the merits and specifications of the boat should accompany the drawing. For those designs which we publish we will pay \$35. After all designs have been published we will allow our subscribers to vote for their "Ideal Motor Houseboat." The design receiving the greatest number of votes will be declared the winner, and the designer will be awarded \$65 worth of merchandise, which may be selected from any advertiser in MoToR BoatinG.



For shafting over 1½" diameter

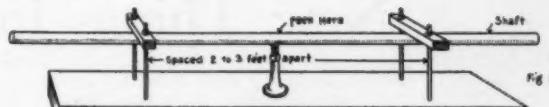
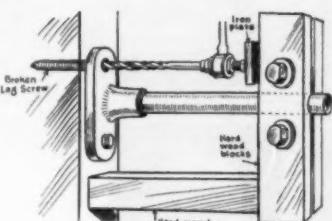


Fig. 1

Fig. 2

For shafting under 1½" diameter

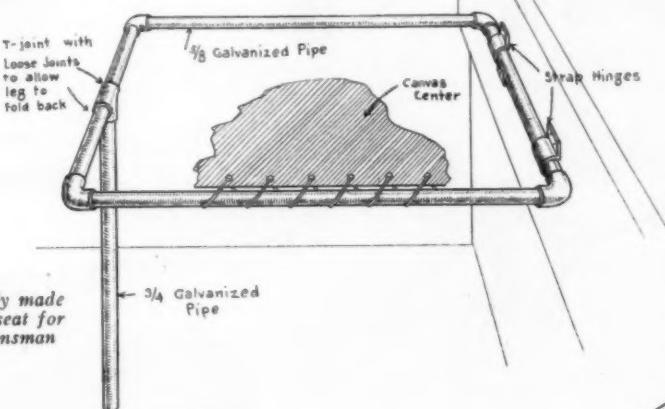
To straighten the bent shaft, use a lever or jack as shown



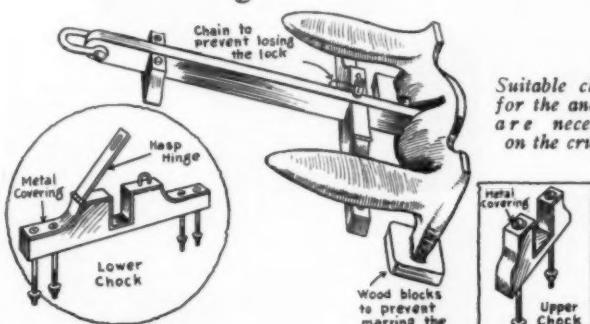
How to remove the broken lag screw

E.Z. Tap in place, ready to be backed out with the monkey wrench.

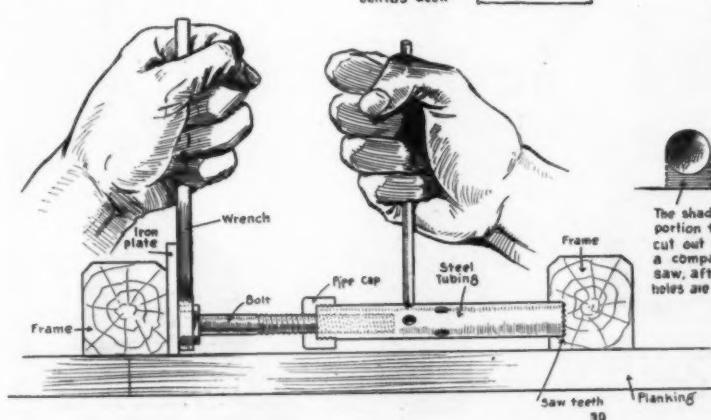
An easily made folding seat for the helmsman



Suitable chocks
for the anchors
are necessary
on the cruiser



Method of removing
rust and deposit from
the water-jacket space



A troublesome job to bore limber holes after the boat is completed

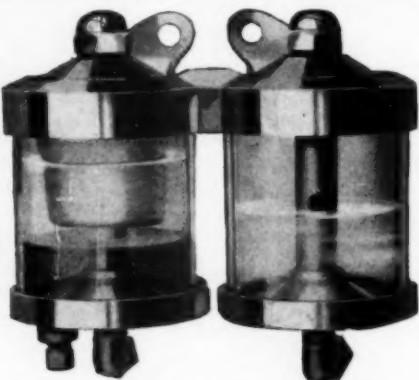
New Things for Motor Boatmen

Each month new parts, attachments, and fittings, interesting and invaluable to owners of large and small motor boats, are added to the devices already on the market. Announcements of these articles come to us in such numbers that in order to introduce all of them to our readers we have been obliged to omit descrip-

tions and publish only illustrations with short explanatory captions. In doing this, however, we urgently invite our readers to write us for complete information, as we shall take the greatest pleasure in providing it, together with the name and address of the manufacturers from whom the products may be obtained.



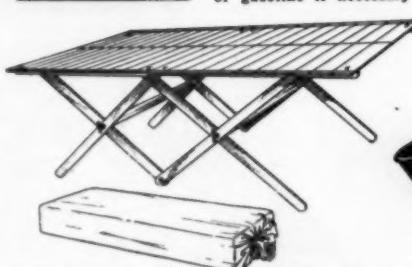
Heavily galvanized sheet steel container for use at gasoline supply stations and for carrying a few gallons of extra fuel on the long cruise. Holds five gallons



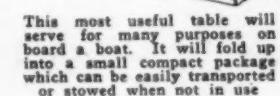
This device is used in conjunction with a vacuum tank on the gasoline feed and affords a visible filter through chamois skin, perfectly cleaning the dirtiest gasoline



Wiping waste so essential on shipboard is now packed in small handy size packages



A centrifugal pump of small size and large capacity will handle circulation and bilge water, or can be adapted to oil or gasoline if necessary



This most useful table will serve for many purposes on board a boat. It will fold up into a small compact package which can be easily transported or stowed when not in use



This funnel is made with a detachable flexible spout. It will reach around the corner and enable one to readily fill otherwise inaccessible tanks



A small refrigerator which can be carried along as required on the small boat. Excellent for one day trips on the small boat which does not carry a regular full size refrigerator



Kerosene burning stove which is adaptable to many uses. It burns with a hot blue flame and will heat water, metals and serve for cooking as well



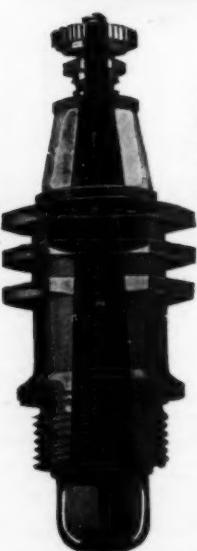
A universal wrench, the pressure of the hand opens the jaws, which automatically tighten in place around the nut or pipe. Handles up to $\frac{3}{4}$ -inch nuts and $\frac{1}{2}$ -inch pipe



Drop-forged pliers particularly durable and valuable for many purposes on every motor boat



An ideal folding stove for the small boat and the camper. It is set up and in operation in a moment. No danger from sparks or fire. Folds up into a small compact package when not in use



Spark plug insulated with rolled mica wrapping which is unbreakable. Special slotted alloy cap permits the spark to take place only at this point. Will function under all sorts of abnormal conditions



Flexible spout on this oil can enables the operator to reach odd corners and keep clean at the same time

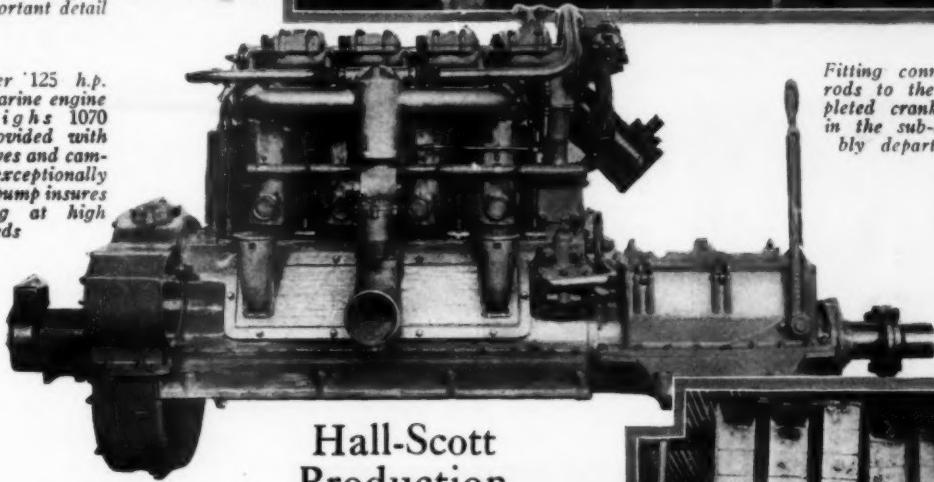
Do not fail to write to the editor if you desire information concerning any of the above new things



Pistons are Die-Cast. A patented process insures absolute accuracy in this important detail



Four cylinder 125 h.p. Hall-Scott marine engine which weighs 1070 pounds. Provided with overhead valves and cam-shafts, an exceptionally powerful oil pump insures proper oiling at high speeds

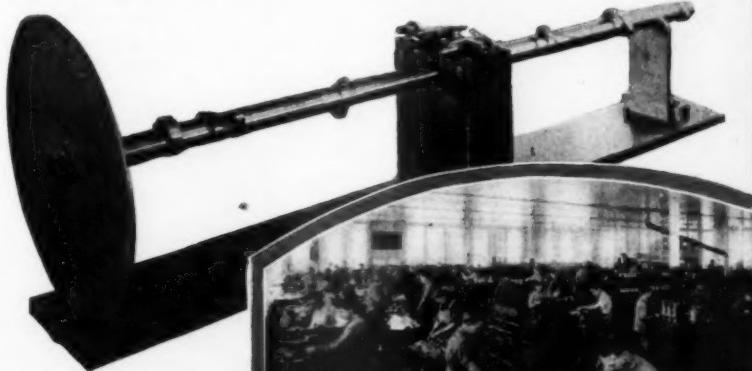


Fitting connecting rods to the completed crankshafts in the sub-assembly department

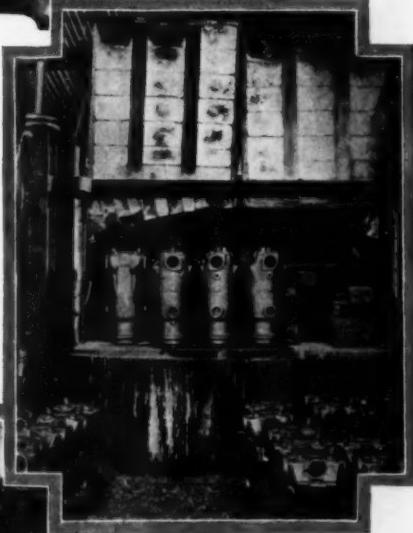
Camshaft checking device used to check the accuracy of cam location and valve timing

Hall-Scott Production

Views of The Methods Used in This Modern Engine Plant



Small parts are received in the sub-assembly department where they are combined. Pistons and connecting rods, crankcases, pump shaft assemblies, etc.



Annealing cylinders in the annealing ovens. The castings are heated very hot and then allowed to cool gradually. Temperatures are kept under constant control by means of sensitive pyrometers. This process relieves the material from all strains originating in the casting process

Yard and Shop

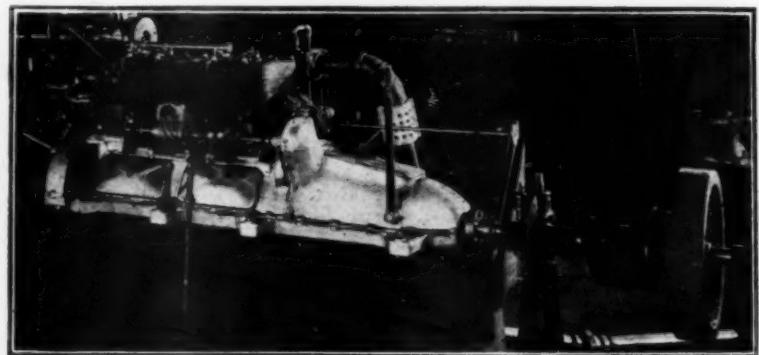
Notes of Interest to Both Owner and Manufacturer

Cory's Anniversary

A seventy-fifth anniversary celebration will shortly be held by Chas. Cory & Son, Inc., when they occupy their new factory at King and Varick Sts., New York, N. Y. The Cory history is interesting, dating back to the time when steamships were novelties. In the beginning in 1845 they manufactured brass rails, bells and tubing. Later they were the first to undertake the manufacture of mechanical telegraph appliances and signalling devices for ships.

Three generations of Cory's have guided the company over its lifetime voyage, and it has constantly lead the field in developing marine equipment, as well as lighting equipment for the various navies and merchant marine.

John M. Cory is the second grandson



During the railroad strikes recently when their power supply failed them the Scripps Motor Company resorted to their own motors to keep the plant operating. Some of their D-4 kerosene engines were coupled to the shop machinery and ran for days, keeping everything turning cleanly and quietly. The advantage of having a source of power available enabled the plant to keep in operation without difficulty.

screw holes. These convenient fittings are driven into the supporting material like nails, and make a permanent hole to which trim, etc., can be securely attached by either wood or machine screws with the additional advantage that the trim can be readily removed for refinishing at any time.

Buffalo Power for House-boat

The Karakol recently built for Mr. Van Kuyk, of Vreeswyk, Holland, is typical of one of the new designs of houseboats which are being used on the

After consulting A. W. Westpalm Von Hoorn, of Leiden, Holland, a 10-12 h.p. heavy-duty Buffalo engine was installed.

Kermath 40 H.P.

In line with many others the Kermath Motor Co., of Detroit, Mich., have to announce an increased price on their 40 h.p. marine motor. The new price will be \$1,650 and in view of the increased cost of all components it cannot be considered excessive.

International Thirty-Two's

Owing to the difficulties in securing the proper grade and high quality of materials necessary to construct these boats in the depleted markets of the present day, the International Shipbuilding & Marine Engineering Corp. have been compelled to increase their prices. The 32-foot standardized cruiser of the raised-deck type will now be sold for \$3,950 and the bridge-deck

(Continued on page 56)

John M. Cory, President and Treasurer
Chas. Cory & Son, Inc.

of the founder and is today president and treasurer and due to initiative and progressiveness of his administration and the able assistance of vice-president, F. W. Wood, in inventing many marine electrical appliances, the company owes its present enviable position as the foremost and largest manufacturers of marine electrical equipment in the world today.

C. S. Jones, recently advanced to the position of assistant to the vice-president, is largely responsible for the splendid engineering design of many of the complicated electrical appliances.

The firm has branches and agencies in all important cities in the United States and their products are known the world over among seafaring men.

Stine Screw Holes

In high class yacht finishing and trimming it is becoming more necessary to fasten trim, etc., by means of Stine



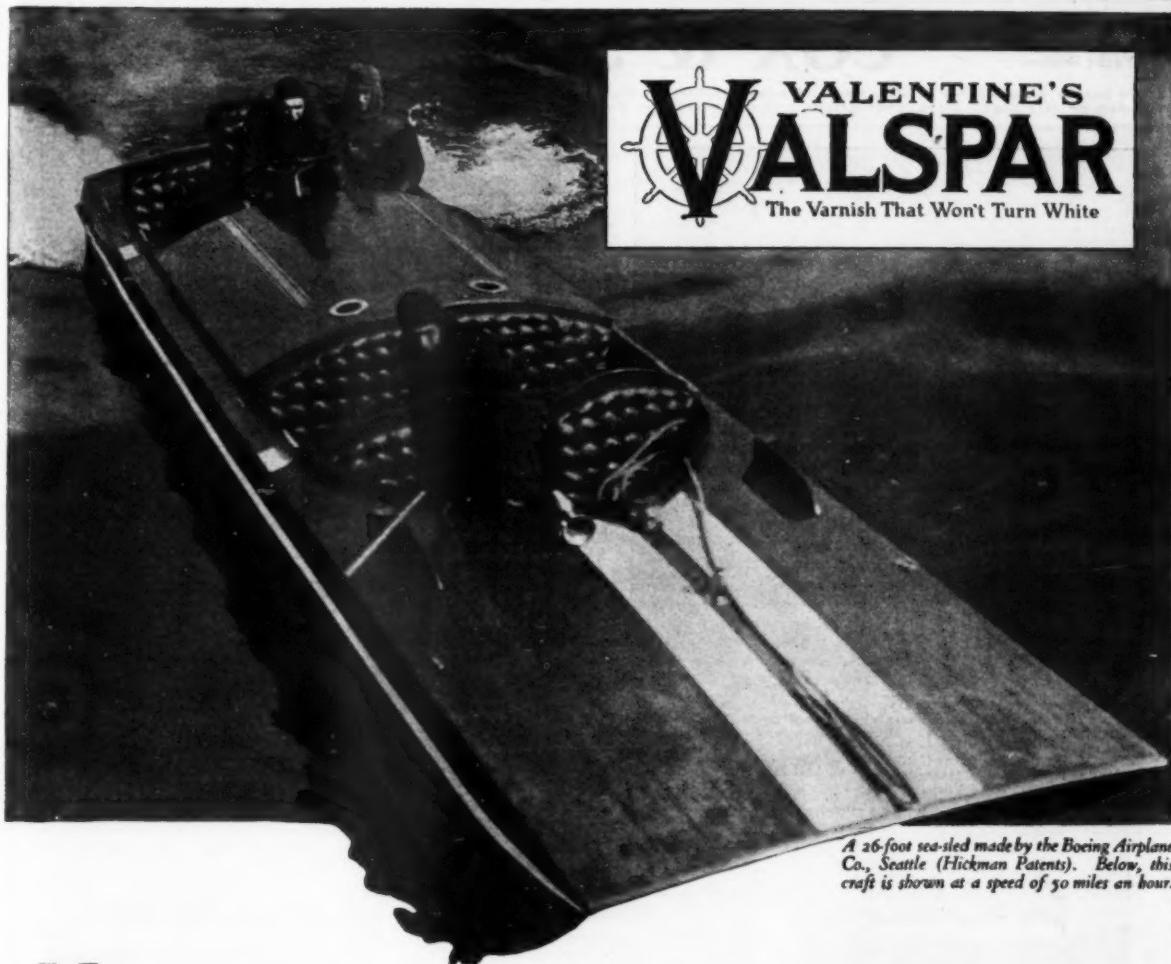
F. W. Wood, Vice-President and General Manager

canals of Holland. Her length is 60 feet overall and beam 18 feet.

The powering of this boat offered quite a problem, because of its extreme weight, combined with the fact that the diameter of the propeller could not be more than 22 inches.



C. S. Jones



A 26-foot sea-sled made by the Boeing Airplane Co., Seattle (Hickman Patents). Below, this craft is shown at a speed of 50 miles an hour.

HERE is the newest thing in speed boats—the Boeing "sea-sled."

Swift as a racing automobile—smooth-running as a Pullman Car—it flashes over the water at 50 miles per hour.

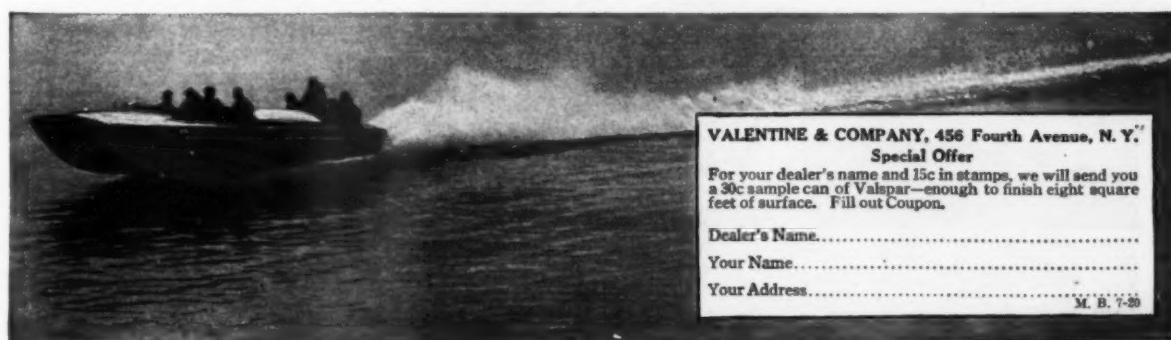
Yes—it's Valsparred, of course!

Tough, elastic, durable Valspar—waterproof and weatherproof—is the favorite varnish of boat-builders and boat owners everywhere.

Send for our booklet "How to Use Valspar on Boats." It is full of useful varnish and paint tips.

VALENTINE & COMPANY

Largest Manufacturers of High-grade Varnishes in the world — *Established 1832*
 New York Chicago Boston Toronto London Paris Amsterdam
 W. P. FULLER & CO., Pacific Coast



VALENTINE & COMPANY, 456 Fourth Avenue, N. Y.

Special Offer

For your dealer's name and 15c in stamps, we will send you a 30c sample can of Valspar—enough to finish eight square feet of surface. Fill out Coupon.

Dealer's Name.....

Your Name.....

Your Address.....

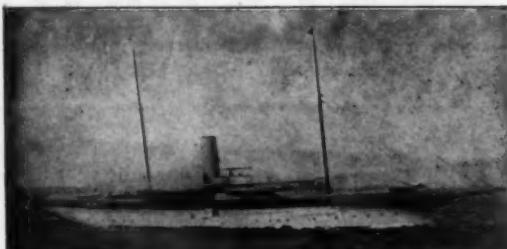
M. B. 7-20

Naval Architects
and
Yacht Brokers

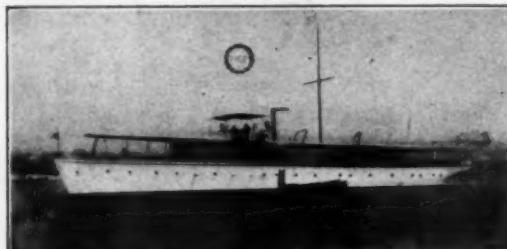
COX & STEVENS

15 William St., New York
Telephone—1375 Broad
Cable—BROKERAGE

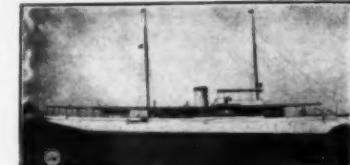
We have a complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER. A few are shown on this page. Plans, photographs and full particulars furnished on request.



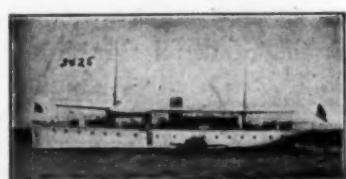
No. 71—For Sale—200 ft. seagoing steel steam yacht. Lloyds highest rating. Cox & Stevens, 15 William Street, New York.



No. 1466—For Sale or Charter—Particularly desirable 140 ft. twin-screw steel cruising power yacht. Speed up to 18 miles; two 300 H.P. Standard motors. Dining saloon and social hall on deck; 3 double and 1 single staterooms, 3 bath and toilet rooms, etc. Recently overhauled thoroughly at large expense. In splendid condition. Further particulars from Cox & Stevens, 15 William Street, New York.



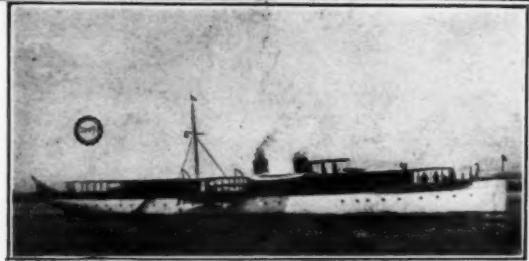
No. 1225—For Sale—Twin-screw cruising power yacht; 138 x 15.9 x 7.8 ft. Speed up to 18 miles, two 300 H.P. Speedway motors. Two saloons, three double staterooms, bath and two toilets, etc. Price low. Cox & Stevens, 15 William Street, New York.



No. 2-25—For Sale or Charter—Twin-screw cruising power yacht; 90 x 16.6 ft. Speed up to 12½ miles; two 6 cyl. 60/90 H.P. motors. Excellent accommodation. Cox & Stevens, 15 William Street, New York.



No. 1997—For Sale—Cruising power yacht; 81 x 12 x 4 ft. Speed up to 15 miles; 6 cyl. 100-120 H.P. "20th Century" motor. Dining room, three staterooms, toilet room, etc. Cox & Stevens, 15 William Street, New York.



No. 3047—For Sale—Particularly attractive 165 ft. fast oil-burning twin screw, steel steam yacht. Speed up to 19 miles. Beautifully finished and furnished. Large accommodation includes dining saloon and music room on deck, six staterooms and three bathrooms below aft. Cox & Stevens, 15 William Street, New York.



No. 1835—For Sale—Attractive twin-screw cruising power yacht, 98 x 16.6 x 4.6 ft. Speed up to 16 miles. Two air-starting reversible Standard motors. Large dining saloon, two double and two single staterooms, bathroom and two toilet rooms, etc. All conveniences. Practically in commission. Price and further particulars from Cox & Stevens, 15 William Street, New York.



No. 979—For Sale (might charter)—Especially desirable 98 ft. twin screw cruising power yacht. Speed up to 16 miles; Standard motors. Deck dining saloon, three double and one single staterooms, two bathrooms, etc. Teakwood deck house and deck trim. Completely overhauled, new furnishings throughout. Delivered in commission. Price reasonable. Cox & Stevens, 15 William Street, New York.



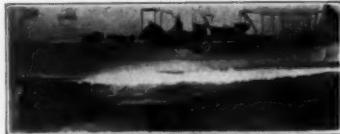
No. 2560—For Sale—Fast, V-bottom, twin screw power cruiser; 60 x 13 x 3 ft. Built 1917. Speed up to 18 miles; two 6 cyl. Sterling motors. Double stateroom forward; roomy saloon aft with separate galley; two toilet rooms (one with Sitz bath). Low price for quick sale. Cox & Stevens, 15 William Street, New York.



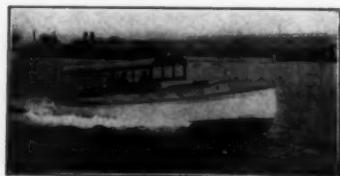
No. 2564—For Sale—50 foot Elco bridge deck cruiser. Built 1917. Speed 12 miles 6 cyl. 60/85 H.P. Sterling motor. Double stateroom, saloon with upper and lower berths, toilet room, galley, etc. Price attractive. Cox & Stevens, 15 William Street, New York.



No. 2888—For Charter—Twin-screw Diesel power yacht; 110 x 18 x 6 ft. Speed up to 14 miles; two 150-175 H.P. Craig-Diesel motors. Extremely economical to operate on account low fuel cost and small consumption. Excellent accommodation. Handsomely finished and furnished. Cox & Stevens, 15 William Street, New York City.



No. 3426—For Sale—High speed Lawley built twin-screw hand V-bottom cruiser; 60 x 10.9 x 3 ft. Speed up to 25 miles; two 130/180 H.P. Van Blerck motors, new 1917. Double stateroom, large saloon, bath and toilet room, etc. Handsomely finished and furnished. Price attractive. Cox & Stevens, 15 William Street, New York.



No. 3689—For Sale—Fast Hand V-bottom cruiser, 45 x 10 x 3 ft. draft. Built 1918. Speed up to 20 miles; Sterling motor. In excellent condition. Cox & Stevens, 15 William Street, New York.

NAVAL ARCHITECT
ENGINEER
BROKER
MARINE INSURANCE

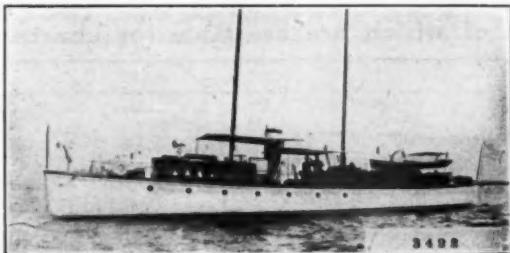
HENRY J. GIELOW

23 WEST 43RD STREET, NEW YORK

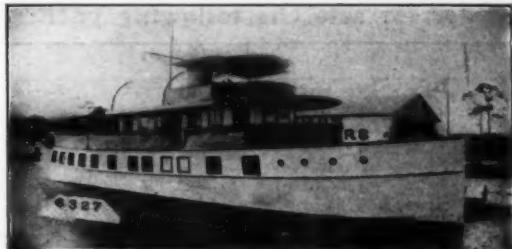
Tel.: Murray Hill 9124
Cable Address:
Cregia, New York
A.B.C. Code

ALSO: CHICAGO, STEAMBOAT EXCHANGE, 350 NORTH CLARK STREET, CHICAGO

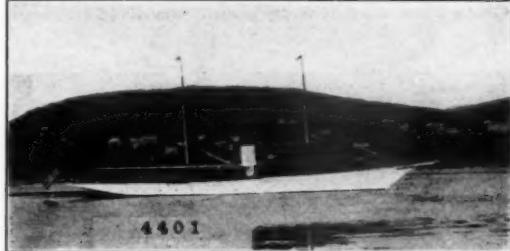
I have a most complete and up-to-date list of steam and motor yachts of all sizes, sail, auxiliary, and houseboats on file in my office, kept constantly up-to-date by a thorough and comprehensive canvass of the entire yachting field from time to time. I am in a position to submit full information on any type of boat upon request.



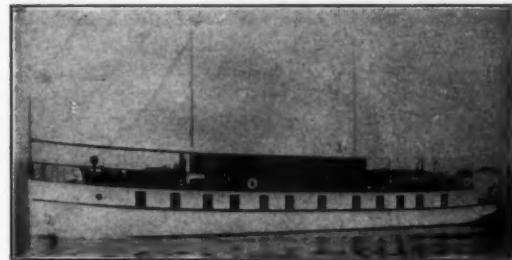
No. 3422—For Sale—Desirable 94 foot twin-screw steel power yacht. Deck dining room. Two double staterooms, bath and two toilets. Hot water heated. Standard engines. Speed 12 to 14 miles. Price reasonable. Henry J. Gielow, 23 West 43rd Street, New York City.



No. 6327—Sale or Charter—98 foot cruising houseboat. Built 1919. Owner's stateroom with adjoining bathroom and lounging room in deck house. Below five staterooms, three bathrooms and dining room. Henry J. Gielow, 23 West 43rd Street, New York City.



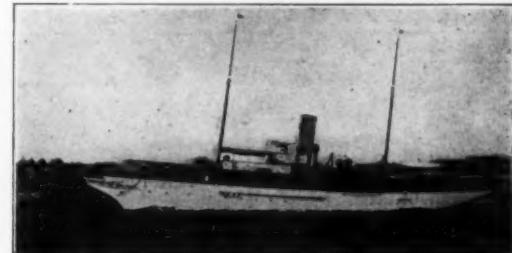
No. 4401—For Sale—137 ft. very attractive twin screw motor yacht. Speed 15 to 16 miles. Built by Lawley. Deck dining room and smoking room. Three double staterooms. Hot water heated. Price attractive. Henry J. Gielow, 23 West 43rd Street, New York City.



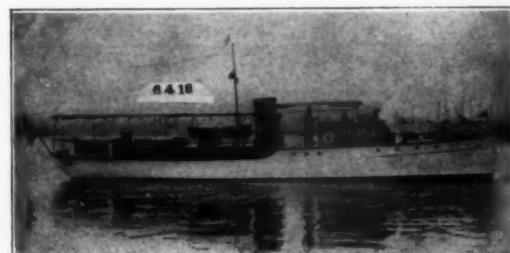
No. 5006—For Sale—Desirable twin screw 110 foot cruising houseboat. Speed 12 miles. Deck, dining room and lounging room. Seven staterooms, three bathrooms. Now in commission. Henry J. Gielow, 23 West 43rd Street, New York City.



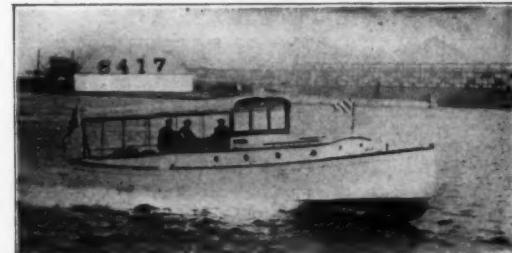
No. 5403—For Charter—Desirable 51 foot houseboat. Standard motor. Large deck space. Two double and two single staterooms. Electric lights. Henry J. Gielow, 23 West 43rd Street, New York City.



No. 2138—For Sale—162 foot steel steam yacht. Dining room and music room on deck. Six staterooms, two bathrooms for owner and guests. Overhauled throughout, 1919; also boiler retubed. Henry J. Gielow, 23 West 43rd Street, New York City.



No. 6418—For Sale—72 foot twin screw bridge deck cruiser. Built 1917. Winton motors, 150 H.P. each. Deck dining room. Two double staterooms and bathroom. Electric and hot water heated. Henry J. Gielow, 23 West 43rd Street, New York City.



No. 6417—For Sale—45 foot Hand, V bottom express day cruiser. Built 1918. Speed 22 miles. Toilet room, cabin and galley. Large cockpit. Henry J. Gielow, 23 West 43rd Street, New York City.

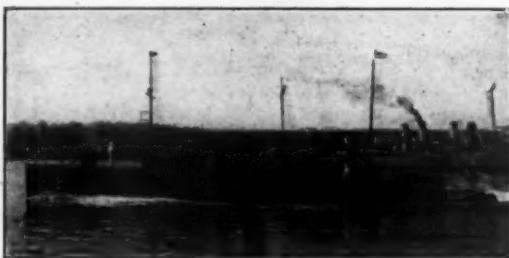
TAMS, LEMOINE & CRANE

NAVAL ARCHITECTS AND YACHT BROKERS

Telephone
4510 John

52 Pine Street
New York City

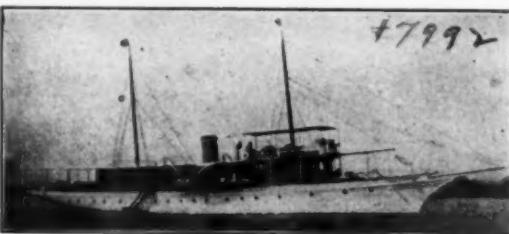
Offer for sale the following yachts, some of which are available for charter



No. 8102—Sale—Charter; most desirable raised deck cruiser available; practically new, 81 ft. x 13 ft. x 5 ft. draft. Speed 15 miles, electric light, hot water, heat and refrigerating plant.



No. 8261—For Sale—In commission, immediate delivery, exceptionally desirable fast 58 ft. day cruiser. New Hall-Scott motors.



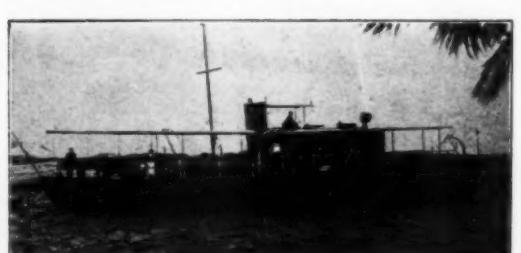
No. 7992—For Sale—Modern steel motor yacht, 115 ft. 7 in. x 17 ft. x 5 ft. 3 in. draft. 2—100 H.P. Standard motors. Speed 15 miles. Commodious owners' quarters.



No. 1927—Sale—Charter—Very desirable; twin screw houseboat; 5 staterooms, 3 bathrooms, dining saloon, lighted by electricity and hot water heat.



No. 1934—Sale Bargain, houseboat 61 ft. overall by 24 ft. beam, 4 staterooms, dining room, living room, conservatory, bath, etc., hot water heat, electric light and refrigerating plant. Most luxuriously fitted and furnished.



No. 7877—Sale—Desirable 90 ft. raised deck cruiser. Commodious accommodations. Very large deck space.



No. 1902—Sale or Charter—in Florida. Most commodious houseboat of her length available; 64 ft. x 17 ft. 6 in. x 3 ft. 2 in. draft.



No. 7474—Sale—Brand new fast cruiser; 2-6 cylinder Sterling motors; speed 21½ miles; all modern conveniences.

WILLIAM GARDNER
F. M. HOYT

PHILIP LEVENTHAL
W. T. HOLLEY

WILLIAM GARDNER & CO.

Naval Architects, Marine Engineers and Yacht Brokers

Telephone Call
5636 Bowing Green

1 Broadway, New York

Cable Address
Yachting, N. Y.

We have a complete list of Yachts of every description for sale and charter

Plans, Photos and full particulars furnished on request



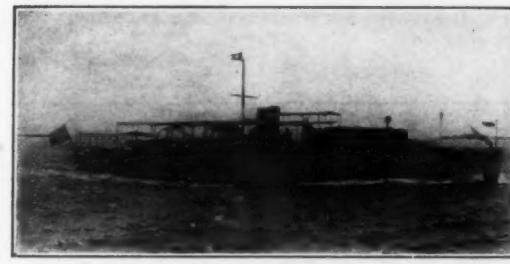
No. 1338—Power Yacht, flush deck, 135 x 15.8 x 7.6. Lawley built, two 250 H.P. Speedway motors, splendid accommodation.



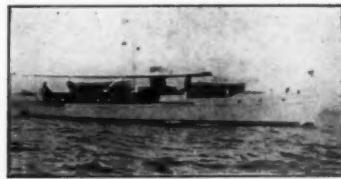
No. 2334—For Sale—New twin screw express cruiser, 85 x 14.3 x 4.3. Two 6 cyl. Sterling engines. Speed 20 miles.



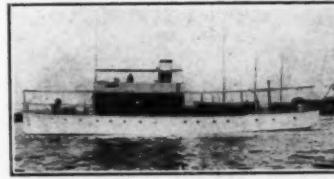
No. 2133—Express cruiser, 92 x 11.6 x 3.6, two 8 cylinder Sterling motors. Speed 25/30 miles.



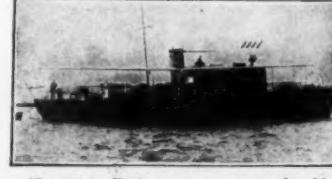
No. 1937—Charter—Sale—Attractive twin screw power yacht, 110 x 18, Diesel engines, speed about 13 knots, excellent accommodation and exceptionally economical to operate.



No. 1377—Attractive Twin Screw Cruiser, 70 x 13.6, two Twentieth Century motors, two double staterooms, saloon, etc.



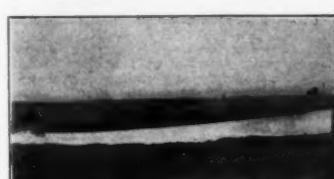
No. 1821—Twin Screw Power Yacht, 90 x 15.4, two six cylinder motors, good accommodation, etc.



No. 1453—Twin screw power yacht, 90 x 17 x 4, two 6 cylinder 20th Century motors. Speed 11 knots. Large accommodations.



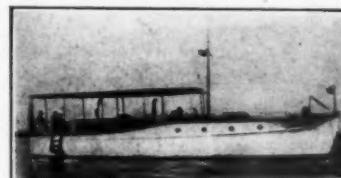
No. 1939—Ideal power yacht, 80 x 14.6, two 6 cylinder Sterling motors, speed 14 miles. Everything in A-1-condition.



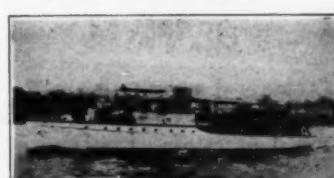
No. 2108—Fast Motor Boat, 40 x 5.6. 8 cylinder 175 H.P. Sterling engine, speed 22/25 miles. Mahogany finish.



No. 1423—Charter—Raised deck cruiser, 55 x 12, six cylinder Sterling motor, double stateroom, saloon, etc.



No. 2297—Bridge deck cruiser, 48 x 11, six cylinder Sterling, speed 12 miles, first-class condition.



No. 1738—Power cruiser, 65 x 11, six cylinder motor. Speed 11 knots. Good condition.



No. 2496—Raised deck cruiser, 42 x 9, four cylinder Sterling new 1916. Bargain figure on account owner moving away.

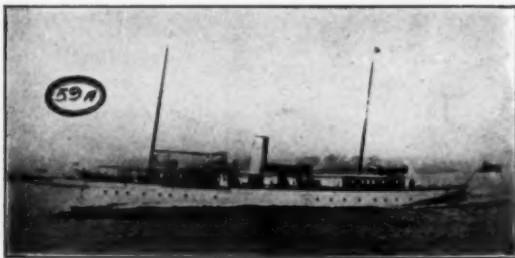
EDWARD P. FARLEY CO.,

Naval Architects, Yacht Brokers, Surveying, Marine Insurance

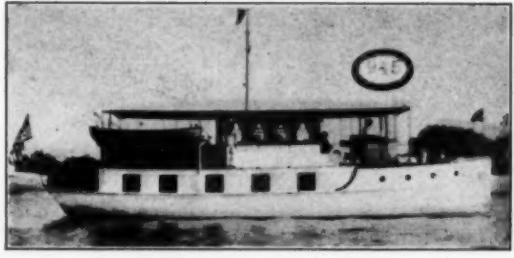
We have a complete list of all Steam and Power Yachts, Auxiliaries and Houseboats which are offered for sale and charter.

Plans, Photographs and full particulars furnished on request.

**6 N. Michigan Avenue, Chicago, Ill.
Telephone Har. 1343**



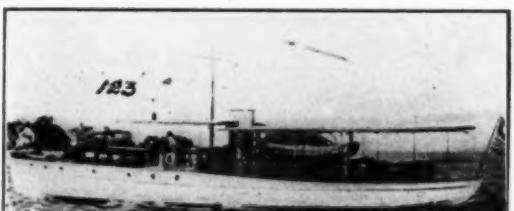
No. 59a—For Sale—170 ft. steel steam yacht. Six double staterooms, large dining saloon and social hall on deck. Triple expansion engine. Speed up to sixteen miles. Excellent condition. Has had very best of care.



No. 945—For Sale—Mathis 52 ft. houseboat. Launched in December, 1919. Is practically a new boat. Furnishings, etc., are of the best.



No. 971—For Sale—35 ft. Speedway runabout in excellent condition. 150 H.P. Speedway motor, electric starter. Speed 27 miles. Mahogany planking and finish. Batten seam construction. Fully equipped with top, windshield, etc., and all extras as furnished by builders. A rare bargain.



No. 123—For Sale—Matthews built twin screw cruiser. 80 ft. x 14 ft. 4 in. x 4 ft. 6 in. draft. Two double, one single staterooms, bath and toilet. Speed 11-12 miles. Independent lighting plant.



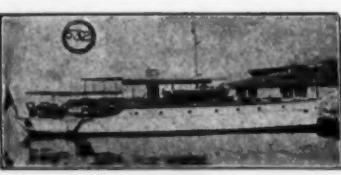
No. 925—For Sale 52 ft. express cruiser. Speed up to 20 miles per hour. Accommodations consist of owner's stateroom, main saloon, gallery, etc. Full equipment. Excellent condition.



No. 83—For Sale—85 ft. twin screw cruising yacht. 16 ft. 7 in. beam, 3 ft. 6 in. draft. Excellent for southern cruising. Three double, one single staterooms, bath, also dining saloon on deck. Cruising speed 14 miles. Is in excellent condition and fully equipped with every modern convenience.



No. 880—For Sale—56 ft. x 11 ft. 6 in. x 3 ft. twin screw express cruiser. Built 1916. Van Blerck motors. Attractively arranged and furnished, with large cockpit aft. Was not in Government service.



No. 532—For Sale—71 ft. twin screw flush deck motor yacht. Built by Seabury. Able seaboot. Excellent condition throughout. E. P. Farley Co., Railway Exchange Bldg., Chicago, Ill.



No. 548—For Sale—Attractive bridge deck power cruiser. 65 ft. x 13 ft. x 4 ft. 8 in. draft. Thoroughly modern and splendid seaboot. Bargain for immediate sale.



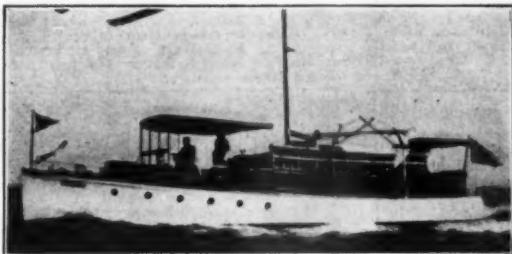
No. 848—For Sale—Modern twin screw cruiser, 84 ft x 13 ft. 6 in. x 4 ft. 8 in. Sterling motors. Speed 13 miles. Two double staterooms, bath, dining saloon forward, with Pullman berths. Excellent condition. Fully equipped.

BROKERAGE DEPARTMENT

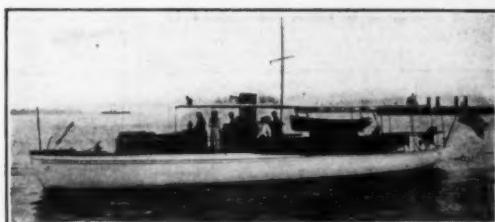
CONSOLIDATED SHIPBUILDING CORPORATION

MORRIS HEIGHTS, NEW YORK CITY

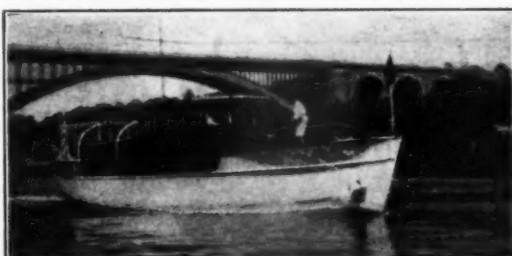
FORMERLY GAS ENGINE & POWER COMPANY AND CHARLES L. SEABURY & COMPANY CONSOLIDATED

AVAILABLE USED CRUISERS

File 329-M.—55 ft. cruiser, excellent accommodations, price reasonable, six cylinder Speedway motor controlled from bridge deck. Available for immediate delivery.



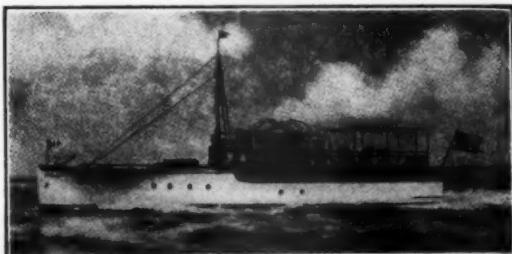
File 179-M.—60 ft. cruiser, 4 cylinder Speedway motor, bridge deck control, speed 10-11 miles per hour, price attractive.



File 120-M.—65 ft. cruiser, deckhouse, attractive accommodations. Seen on Great Lakes.



File 151-M.—Modern bridge deck express cruiser, 60 ft., two 8 cylinder Speedway motors, deck control, speed 25 miles per hour on trial. Price attractive.



File 107-M.—73 ft. raised deck cruiser, excellent stateroom quarters, deck social hall, two 8 cylinder Speedway motors, speed 19-20 miles.



File 106-Y.—Express steam yacht, 137 ft. by 13 ft., now in commission, immediate delivery, speed 25 to 30 miles per hour.

IMMEDIATE DELIVERY.**PARTICULARS ON REQUEST.**

HENRY H. JENNINGS

HERMAN JAGLE

H. H. JENNINGS COMPANY

YACHT and SHIP BROKERS

TRIBUNE BUILDING

Cable Address Yachtbroco, New York 154 Nassau St. New York City

Surveying

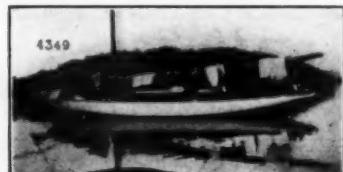
Marine Insurance

Our 25 Years' Experience and Our Knowledge of the Yachts We Offer Insure Satisfaction to Clients
SEND SIX CENTS FOR OUR ILLUSTRATED CATALOGUE

No. 4322—Sale or Charter—Twin-screw 85 foot power houseboat. Five staterooms, dining saloon, three baths, etc. Speed 10 miles.



No. 2093—52 foot express cruiser. Built 1919. Like new. Double stateroom. Two upper and two lower berths in main cabin. Two toilet rooms. Two berths and toilet for crew. Sterling motor 200 H.P. Speed 24 miles.



No. 4349—Keel sloop 50 ft. x 32 ft. x 11 ft. 6 in. x 7 ft. 6 in. Double stateroom. Four fixed berths in main cabin. Toilet room, etc. Fast sailer. Easily convertible to auxiliary yawl. Owner has just purchased larger yacht.



No. 2136—Sale or Charter—Twin screw 80 ft. power yacht. Built last year. Two double staterooms, dining saloon, etc. Two 220 H.P. Standard motors. Speed up to 21 miles.



No. 1334—60 foot cruiser. Double stateroom. Two transom berths in forward cabin and two in after cabin. Sleeps 6 to 8 people. Two berths for crew. New 35-85 H.P. Sterling motor installed this year. Self starter. Speed 12 miles. Electric lights, etc.



No. 2144—60-ft. yacht. Draft 2 ft. 8 in. Two double staterooms, main saloon, large deck saloon, bath, etc. 60 H.P. Sterling motor. Speed, 10-12 miles.

Telephone
480 Whitehall

FRANK BOWNE JONES

YACHT AGENT AND SHIP BROKER

29 BROADWAY

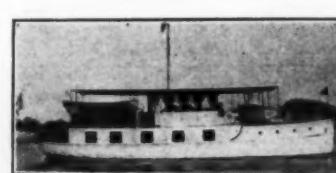
NEW YORK

High class yachts of all types for sale and charter;
also mercantile vessels of all classes.*Let us know your requirements*

No. 4098—Sea going steam yacht. Length 300 ft. One of finest yachts in the fleet. FRANK BOWNE JONES, Yacht Agent, 29 Broadway, New York.



No. 1212—Fastest of the large express yachts. Length 92 ft. Twin-screw. 2-300 H.P. engines. Lawley built. FRANK BOWNE JONES, Yacht Agent, 29 Broadway, New York.



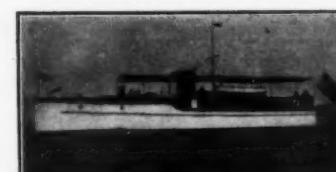
No. 3407—New 50 ft. Mathis Power Houseboat—2 staterooms, 2 saloons, galley, etc. FRANK BOWNE JONES, Yacht Agent, 29 Broadway, New York.



No. 6098—90 ft. gasoline yacht. Lawley built. Twin-screw. Good as new. FRANK BOWNE JONES, Yacht Agent, 29 Broadway, New York.



No. 4697—60 ft. gas cruiser. Best design and build. Speedway motor. Reasonable price. FRANK BOWNE JONES, Yacht Agent, 29 Broadway, New York.



No. 3731—52 ft. Speedway express cruiser. Built 1918. Little used. Speed up to 18 miles. FRANK BOWNE JONES, Yacht Agent, 29 Broadway, New York.

Telephone
969 Vanderbilt
Cable Address
Yachtman, N. Y.

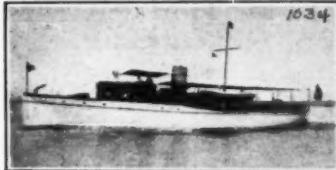
HARRY W. SANFORD

YACHT AND SHIP BROKER

Yacht Appraiser
Marine Insurance

501 FIFTH AVENUE, NEW YORK (42nd St.)

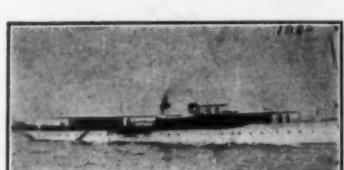
Yachts of all types for sale, and charter; also commercial vessels. We shall be pleased to hear from clients interested in buying, selling or chartering



No. 1034—For Sale—80 ft. power yacht; 3 staterooms, bath. Speed 14 miles. Excellent condition.



No. 292—For Sale—High-class 50 footer. 1 double stateroom and saloon. Speed 14 miles. Perfect condition.



No. 1005—For Sale—165 ft. twin screw steel steam yacht. 6 staterooms, baths, etc. Speed 20 miles. Excellent condition.



No. 1032—For Sale—43 ft. express cruiser. Speed 25 miles. Has had the best of care. Very seaworthy.



No. 10—For Sale—57 ft. passenger or work boat. Carry 70 or more passengers. Price attractive.



No. 945—For Sale—60 ft. express cruiser. Speed 25 miles. Excellent condition and the best of construction.

THE MOTOR BOATING MARKET PLACE

The rate for "For Sale" and "Want" advertisements is 6 cents per word, minimum \$1.50. If an illustration is used, the charge is as follows, which includes the making of the cut:

Cut one inch deep, one column wide..... \$5
Cut 1½ inches deep, 1½ columns wide..... \$10
Cut 2½ inches deep, three columns wide..... \$20

Terms: Cash with order.

Opportunities for the Motor Boatman

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention Motor Boating.



For Sale—Handsome new fast express cruiser, 52 ft. by 11.4 ft. by 3 ft., constructed in the highest manner. Copper fastened. Launched December, 1919. Little used. Accommodation seven in owner's party. Two in the crew. Three toilets. Electric starting and lighting system. Headroom, 6 ft. 6 in. Fitted with fly screens. Engine, six-cylinder Sterling FM. Yacht completely equipped includes power tender. Price reasonable. Apply P. L. B., 1 East Fifty-first St., New York.



No. 1342. For Sale—High grade Lawley designed and built express cruiser, 43½ ft. overall, 9½ ft. beam. Speed, 22 miles. 150 h.p., six-cylinder Sterling, just overhauled at factory. Roomy cabin, owner's toilet and galley. Crew's quarters forward with toilet. Large after cockpit for chairs. Roomy bridge. Substantially built, 1916. Whole outfit in perfect order. Apply John G. Alden, 148 State St., Boston, Mass.

For Sale—38 ft. hunting cabin cruiser. Hull practically new. Good sea boat. Three cylinder Bridgeport motor. Run less than 500 miles. Speed ten miles per hour. Cost \$1500.00. Will sell for \$500.00 cash. Address Edmund C. Mayo, care of American Tube & Stamping Company, Bridgeport, Connecticut.

For Sale—Sterling 8 cyl. 180 H.P. high speed valve-in-head Model R motor. Complete with exhaust stacks and manifold. Used very little, condition good as new. First check for \$1,500.00 takes it. W. P. Laurents, Laurents, La.

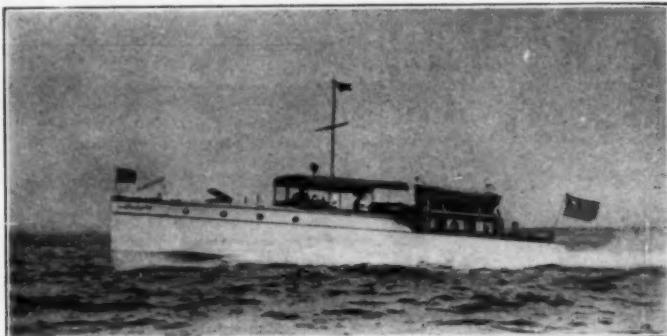
For Sale—Motor Boating Vols. I-VIII inclusive bound in green canvas red and gold leather title label. Binding includes all ads and covers. Books having been in private library only are in A1 condition. L. L. Lorillard, Pomfret Centre, Conn.

THE MOTOR BOATING MARKET PLACE

The rate for "For Sale" and "Want" advertisements is 6 cents per word, minimum \$1.50. If an illustration is used, the charge is as follows, which includes the making of the cut:
 Cut one inch deep, one column wide..... \$ 5
 Cut $\frac{1}{2}$ inches deep, $\frac{1}{2}$ columns wide..... \$10
 Cut $\frac{3}{4}$ inches deep, three columns wide..... \$20
 Terms: Cash with order.

Opportunities for the Motor Boatman

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention Motor Boating.



No. 3517—For Sale—High speed, twin screw, bridge deck cruiser; $52 \times 11 \times 2.9$ feet. Speed up to 30 miles per hour; powered with two brand-new 8 cylinder Sterling Model G-R motors. (This plant is a duplicate of the one installed in the famous "Hoosier V" excepting that latter boat had six cylinder motors.) Hull built 1917 in best possible manner; double planking of mahogany; copper fastened. Construction particularly substantial for this type of craft. Hull of V-bottom type—has proven splendid sea boat and thoroughly dry at high speed. Cabin aft has two transoms, toilet room and galley. Now in commission; probably most desirable craft of type available for express ferry service. Apply to Cox & Stevens, 15 William Street, New York (Telephone 1375 Broad) or your own broker.

For Sale—62 by 12 by 4 motor yacht. Standard motor. Speed 10 miles. \$7,000.00. Percy M. Child, 1110 14th St. N.W., Washington, D. C.

For Sale—1—9 in. pilot house control and 1—7 in. deck type Carlisle & Finch search lamps. Percy M. Child, 1110 14th St. N.W., Washington, D. C.

For Sale—1 pair Bausch & Lomb binoculars, 6 power, same as new. Percy M. Child, 1110 14th St. N.W., Washington, D. C.

Use "SNAPPER" ENGINES for your small boat. They are a big little engine built by The Automatic Machine Co., Bridgeport, Conn.

For Sale—Van Blerck 4 cylinder, $5\frac{1}{2} \times 6\frac{1}{4}$, 75 to 100 H.P. Owner needs more power. Covered about 500 miles. Stauffer, Eahleman & Co., Ltd., New Orleans, La.

Tuckers "Overall" waterproofing Grade C for boats, fills open seams. Grade A for electric work stops shorts on terminals and wires. Not affected by heat, oil or salt water. Sample 50 cents. Pr. 90 cents. Qt. \$1.50. Agents wanted. Tucker Waterproofing & Insulating Co., 664 Pleasant St., Brockton, Mass.

Trimount
Whistle Blower Outfits
Blower runs by friction contact with engine flywheel. Whistle of brass, nickel-plated.
Made in 3 sizes.

TRIMOUNT ROTARY POWER CO.
20 Heath Street
Boston, Mass.
(Factory: 292 Whiting Ave., East Dedham, Mass.)

For Sale—Twenty-one foot V-bottom runabout, twenty-five H.P. Sterling four cylinder engine. North East starting and lighting system. Full automobile control, white finish with solid mahogany trim, full nickelized brass equipment auto top and side curtains. Speed about twenty miles. Used less than one season. Now in commission. This is a high class outfit. Write builders, Great Lakes Boat Building Corp., Milwaukee, Wisc.

Trimount
Rotary Hand Bilge Pumps
All bronze composition. Suction lift 6 to 20 feet. A lifelong convenience.
Made in 3 sizes.



All Sizes Rebuilt

marine engines from one to 300 H.P. 4 cylinder 6 cycle Graig 10x14" 50° 3 blade propeller. \$3,000.00 a pair 11x18 Graig's \$4,000.00. 37 H.P. Standard 4 cylinder \$1,800.00. 6 cylinder 6x8 Speedway \$600.00. 100 H.P. Graig \$1,500.00. Automatic, Buffalo, Latrop, Standard, Milwaukee, Palmer and others.

Send for complete list

HAMILTON MARINE ENGINE EXCHANGE

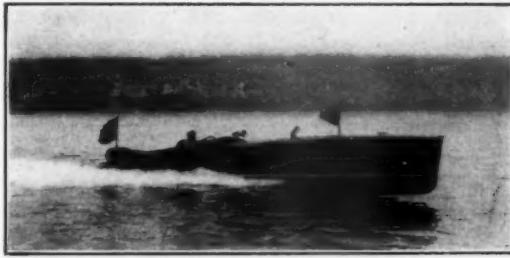
440-444 Fifty-second Street
Brooklyn, N. Y.

THE MOTOR BOATING MARKET PLACE

The rate for "For Sale" and "Want" advertisements is 6 cents per word, minimum \$1.50. If an illustration is used, the charge is as follows, which includes the making of the cut:
 Cut one inch deep, one column wide..... \$5
 Cut 1½ inches deep, 1½ columns wide..... \$10
 Cut 2½ inches deep, three columns wide..... \$20
 Terms: Cash with order.

Opportunities for the Motor Boatman

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention Motor Boating.



An exceptional opportunity to purchase one of the handsomest 35 x 6 Crouch design V-bottom family runabouts; all mahogany piano finish; used comparatively little and in perfect condition. Approximate speed 33-35 miles per hour. Power plant six cylinder 5½ x 6½ Model R Sterling motor equipped with Bosch magneto, Bosch Rushmore electric starting and lighting outfit with all bulkhead control. Will carry comfortably nine people—three on drivers seat, four in wicker chairs and two or three in lazy back seat. Boat completely equipped with best leather cushions, lights, new automobile top with side curtains, etc. This is an exceptional opportunity for any one desiring to purchase a very high grade outfit at a reasonable price. For further particulars, address M. C. Kimball, 153 West 15th Street, New York City.

For Sale—Buffalo 6 x 7 2 cylinder four cycle 14 H.P. heavy duty engine with reverse gear attached and 24 in. x 30 3 blade propeller just out of shop; thoroughly overhauled. No magneto. \$500.00. Box 1626, Savannah, Ga.

Canada's exclusive wholesale and retail marine engine jobbers. Dominion's Largest Distributors. Free illustrated catalog, showing prices of twenty-six manufacturers. Canadian Boat and Engine Exchange, Ltd., Toronto, Canada.

Wanted for cash, good sea motor yacht or yawl boat with motor, no junk, must be bargain. R. Clinton Williams, Thomson, Ga.

CANADIANS, Second-hand engine bargains. Send for list.

GUARANTEE MOTOR COMPANY
73 Bay Street, North Hamilton, Ont., Canada

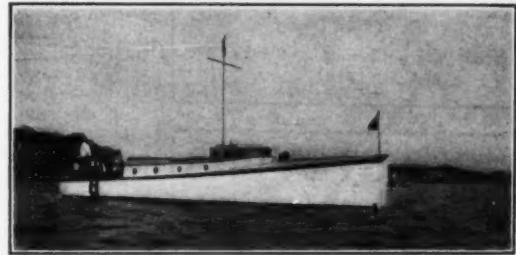
For Sale—2 Model J. Van Blerck Motors, 215 H.P. each, entirely rebuilt and in A-1 condition. Bowler, Holmes & Hecker Co., 259 Greenwich St., New York City.

For Sale: A 40 ft. raised deck cruiser complete to the minutest detail with every possible convenience. Double stateroom and saloon sleeping five or six. Price \$3,000. Cannot be duplicated for double. For complete description address Yachting, c/o Motor Boating.

For Sale—One two cylinder, 2 cycle, 7 H.P. Eagle marine engine, Schebler carburetor, all-inclusive, water cooled muffler. \$60.00. Also Detroit 3 H.P. Marine engine \$30.00. Standard reverse gear \$12.00. All in fine condition. Box 98, Sturgis, Mich.

Beautiful, speedy, mahogany, brass-finished Seabury Yacht tender. Universal, 4-cylinder engine. In perfect condition. Built for millionaire's yacht. Write Chester, 1599 East 96 Street, Canarsie, N. Y.

For Sale—Life Preservers, both new and second hand. New Cape Cod dories, 20 ft. 6 in. x 5 ft. 10 in. \$75.00 each. Subject to prior sale. C. C. Galbraith & Son, Inc., 117-118 West Street, N. Y. Telephone Cortland 8442.



For Sale—Fast 42 ft. motor boat, semi-cruiser type; 6-cyl. Speedway engine; special clutch, steer inside or outside; varnished decks and cockpit; brass and mahogany trimmed; 2 bunks, now being painted; in commission at once if desired; will take \$3000.00; cannot be duplicated for \$7500.00. Machinery just overhauled at an expense of \$1250. O. H. Sherbrook, Blandford St., Boston, Mass.

Auto Motor Supplies—Buick—Michigan—Standard Dayton—Cadillac—Overland—E.M.F. Continental and Buda Motors, all types \$50 each and up. Special high tension 2 and 4 cylinder Magneto \$9.50 each. Electric and Gas Head Lamps—Coils—Carburetors—Air Compressors—Generators—Starters, etc. Write for late catalogue. Address Motor Sales Dep't. B, West End, Pittsburgh, Pa.

For Sale—Forty-foot motor cruising boat accommodating seven—Sterling powered. Will sell reasonable. May consider good car in trade. Box 29, Motor Boating.

For Sale—Two new 15 ft. clinker built boats including oars, boat-hooks, oars, covers, air tanks, davits, tackle, etc. A big bargain at \$500. H. M. Bronner, 25 West 43rd St., New York City.

For Sale: Sterling Engine, 16-25 H.P. Also a Northeast electrical starter. Used only a short while in motor boat. Hugh Richardson, Atlanta, Ga.

For Sale or Trade—11 H. P. model V Gray, like new, \$175.00. Will trade for 20 H. P. copper water jacketed Emmerson. W. D. Helmick, 1436 S. 6½ St., Terre Haute, Ind.

A BARGAIN FOR SOMEONE

Gentlemen's Cruiser—Captain, now owner, having no use for glass cabin cruiser wishes to dispose of it. 56 feet, 12 foot beam, 40 H.P. Friby engine. Practically new, five-ton engraved lead keel, pilot house control. San Domingo mahogany, all Seabury's brass fittings, kitchen, toilet; can be seen by appointment. Dorman, owner, 531 East 26th Street, Brooklyn.

	One cyl. Two cycle	Two cyl. Two cycle	Four cycle engines
3 H.P. Sterling	\$30.	18 H.P. Smalley, 3 cyl. \$115	12 H.P. Dunn 4 cyl. in new stock.....\$125.
3½ H.P. Caille	45.	20 H.P. Gray, 2 cyl. 6 x 6.....165.	12 H.P. Universal four cyl. with gear, rear starter, and propeller outfit.....215.
4 H.P. Gray	50.	6.....	20 H.P. Westman four cyl. 4½ x 4½ with gear.....375.
6 H.P. Waterman	55.	30 H.P. Fairbanks-Morse 4 cyl. 4½ x 4½.....255.	10 H.P. Imperial one cyl. in new stock.....365.
6 H.P. Gray	65.	8 H.P. Buffalo two cyl. 135.	4 cyl. 5x7 Automatic.....1075.
7½ H.P. Ferro	70.	Four cycle engines	
Two cyl. Two cycle		6 H.P. Dunn two cyl. \$65.	
6-8 H.P. Globe	\$95.	6 H.P. Imperial one cyl. in new stock.....135.	
6 H.P. Gray and gear	85.	4 cyl. 5x7 Automatic.....135.	
10 H.P. Lackawanna	75.	4 cyl. 7½x9 Minneapolis 1075.	
12 H.P. Gray	135.	And many others, also large line of auto, tractor, and stationary engines, and supplies at very low prices. We take engines in trade and buy them. What have you?	

BADGER MOTOR COMPANY, Milwaukee, Wis.

NAVAL ARCHITECTS & YACHT BROKERS

Thomas D. Bowes, M. E.
NAVAL ARCHITECT AND ENGINEER

Offices:

Lafayette Bldg., Chestnut and Fifth Sts.
PHILADELPHIA, PA.

COX & STEVENS

Engineers and Naval Architects
Yacht Brokers

15 WILLIAM STREET, NEW YORK CITY
TELEPHONE 1375 BROAD

FREDERICK K. LORD
NAVAL ARCHITECT
120 BROADWAY NEW YORK

CHARLES D. MOWER

Designer of
SENSIBLE CRUISERS
POWER—SAIL—AUXILIARY
Twenty-five years' practical experience
347 Madison Avenue New York City

MONTREAL NEW YORK
286 St. James St. 2 Stone St.
Telephone Main 3352 Telephone Bowling Green 6077

N. E. McCLELLAND & CO., Ltd.
NAVAL ARCHITECTS
YACHT BROKERS

FREDERICK S. NOCK
Naval Architect and Yacht Builder

Marine Railways, Storage, Repairs
East Greenwich Rhode Island

STRONG & BEEKMAN

Yacht and Ship Brokers
29 Broadway New York
Yachts—all types. Sale or Charter; Commercial Vessels, Steamers, Sail and Auxiliaries; Plans, Specifications, New Construction.
Tel. Whitehall 537
Cable Address "Strobick-New York"



Sixteen Years
Designing
Experiencing
Specialty
Seagoing Yachts

J. MURRAY WATTS, N. A.
136 South Fourth St.
Phone Lombard 3072

The Mississippi Valley Regatta

(Continued from page 16)

powered with an eight-cylinder Sterling. As 1912 was strictly a Smith meet, the M. V. P. B. A. took the length over all classifications and dumped them overboard, and adopted piston displacement as a more equitable basis. The new classes were first used at Keokuk in 1913 and proved to be the best and only logical way to classify race boats.

Oregon Kid was the surprise and sensation of 1913. She was a Hacker single-step 20-footer powered with a six-cylinder 5½x6 Van Blerck. A beautiful running boat and very fast for the power. She made one mile at the rate of 51.99 m.p.h.

Hydro Bullet was a Fabre hull powered with an eight-cylinder 5½x6 inch Van Blerck. This boat was cranky and all but lost her driver on several occasions. The new classifications gave the little fellows a show. At no previous regatta were so many boats of small power lined up for the start. The names Leading Lady and P. D. Q. were familiar to Valley fans in 1913.

Little Leading Lady was mostly engine having 16-foot of hull and six-cylinders of Emerson 5x5. She did a little better than 30 m.p.h. P. D. Q. III won from Phantom in the most spectacular race the Valley has witnessed. Both were Hacker-design monoplanes, powered with 215 cubic inch two-cycle motors.

The year 1914 brought out Commodore Blackton's Baby Speed Demon, a Smith 20-footer. It took the Webb Trophy and later in the season the Gold Cup. Baby Speed Demon did one mile at an average of 53.74 m.p.h. and one mile down stream at 54.54 m.p.h.

Kitty Hawk VI was there, with a twelve-cylinder Van Blerck, but she knocked out a plank before demonstrating she was faster than Demon. Ugly Duckling III was the best small boat of the meet, and did 27.9 m.p.h. Other winners were Warren-Groat built by Bill Warren and powered with a 455 cubic inch Wisconsin motor. Spot, a Smith 20-footer and P. D. Q. IV. The latter won many a laugh. She was the freak conception of her builder and owner. There was a little balancing plane aft, which held her tail up when racing—but she got there just the same.

The 1915 Valley champions were Buffalo Enquirer, a Smith 20-footer, Ugly Duckling IV, a Hacker hull, powered with a twelve-cylinder Pierce-Budd, and P. D. Q. V, also a Hacker design with a four-cylinder Johnson aviation motor.

In 1916 Bernard and Jay Smith, the foremost racing drivers in this country did 60 m.p.h. with Miss Minneapolis and took the Webb Trophy at the easy gait of 45.5 m.p.h. Ugly Duckling III and old P. D. Q. V divided the other events open to them. This was the first year that class 151 cubic inches was raced.

The 1918-1919 regattas following the war, had few entries. There were several fast little fellows in class 151 cubic inches all powered with a three-cylinder 4x4 Pierce-Budd. Miss Quincy made 30 m.p.h. over a triangular course. Other 151 boats were Miss Margaret II, War Baby, Muggs and Buzzard.

Miss Detroit II took the Webb Trophy in 1918.

Looking the list over one finds that nearly all of the fastest boats in America have raced in the Mississippi Valley, and we are especially proud of speeds attained in the smaller classes, a Valley product.

Advertising Index will be found on page 118

Jordan Bros. Lumber Co.

Manufacturers

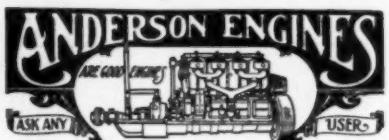
White Cedar Boat Boards and Cedar Products

Norfolk, - - - Virginia

BRUNS, KIMBALL & CO., Inc.

153-5-9 West 15th St., New York City

Offer over 200 rebuilt engines, backed by a strict guarantee, at especially attractive prices. List will be taken free for the asking. Your present engine will be taken in part payment for a new Sterling, Kermath, Gray-Prior, Wolverine, Doman, 4 cycle; Hartford and Arrow, 2 cycle. Write for offer.



Anderson Engine Co., 4832 N. Rockwell St., Chicago.
New York Office, N. W. Cor. Broome & Lafayette Sts.

THE THOMAS LAUGHLIN Co.

Portland, Maine, U. S. A.

Marine Hardware

Sold by all progressive marine dealers.

Catalog sent free to dealers on request.

SPRAY-HOODS BOAT CUSHIONS

ATLANTIC-PACIFIC MFG. CO.

124 Atlantic Ave. Brooklyn, N. Y.



If you want good circulation on your Automobile, Launch or Motor Boat, use a LOBEE PUMP

Lobee Pump & Machinery Co.,
57 Bridge Street,
Buffalo, N. Y.



RONSON WRENCH

Eleven Handy Tools in One
Eight standard open-end wrenches, screw
driver, bottle opener and alligator jaw.
—\$1.00—

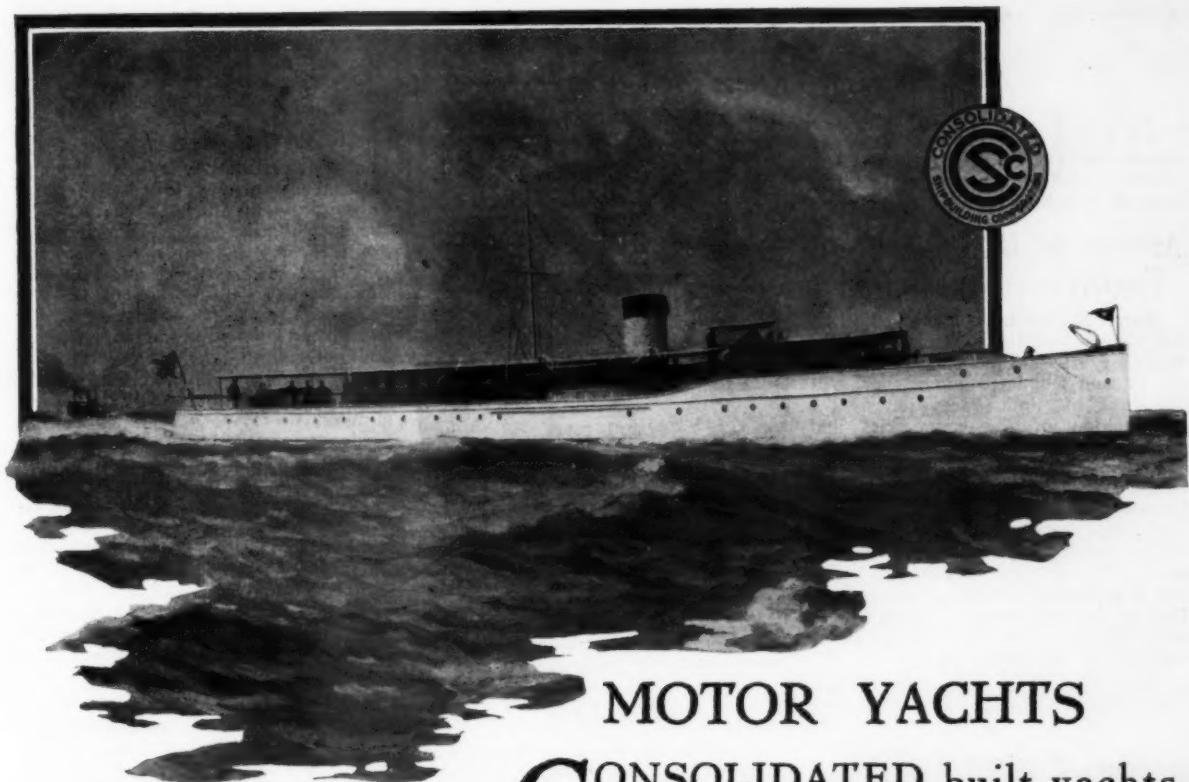
Write for dealer proposition.

THE ART METAL WORKS
Aronson Square Newark, N. J.

A void disaster by using
a DIRIGO compass on
that boat. All materials
first class. No rubber
grabs to rot. A heavy
hinged case and high-grade
Navy degree circle on dial.
Brass and mahogany min-
nades. Also new course
finder and bearings instru-
ment. Send for descriptive
catalog.

EDGAR M. SHERMAN
Box 3 Bellevue, Wash.

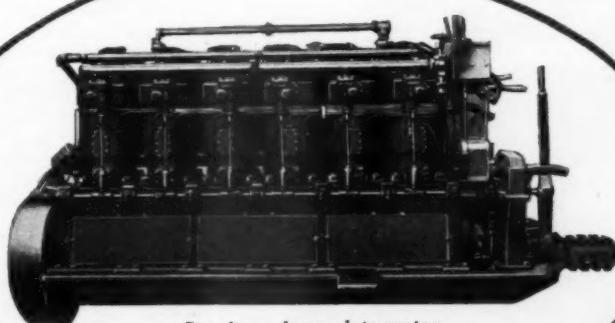




MOTOR YACHTS

CONSOLIDATED built yachts are satisfactory yachts to own. There is a charm of perfect sailing, comfort, smartness in design, and a knowledge that below, motors of the finest workmanship possible are installed. All this combined in a moderate sized yacht are fundamental reasons for the popularity of boats of our own design and build.

*Write for our Booklet
"For the man who
knows good boats."*



Speedway, heavy duty motor

CONSOLIDATED
SHIPBUILDING CORPORATION
MORRIS HEIGHTS, NEW YORK CITY

Motor Boating
July 1920

Yard and Shop

Notes of Interest to Both Owner and Manufacturer

(Continued from page 42)

cruiser will sell for \$4,350. These boats are delivered in the water at the plant at Nyack, N. Y.

Morris M. Whitaker Joins Tams, Lemoine & Crane

Morris M. Whitaker, naval architect, has joined forces with Tams, Lemoine & Crane, of 52 Pine St., New York, N. Y., and will have active charge of the designing and supervision of the construction of the commercial and cargo ship department, as well as their yacht work.

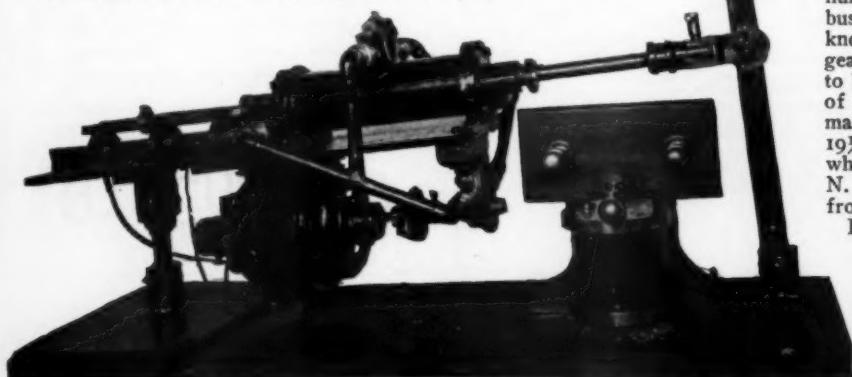
Mr. Whitaker is one of the best known American naval architects and for many years played a leading part in the development of the motor boat as it is known today. He was undoubtedly the pioneer designer of the earliest type of express cruiser. Some of his early designs were very successful in competition many years ago.



Polly is an 81-foot cruiser powered with a pair of eight-cylinder Van Blerck motors which give the boat a speed of 17 miles. Polly is owned by Mrs. Mark A. Hanna, for long one of the most ardent motor boat owners in the country.

Rice Leaders of the World Association

The Packard Electric Co., of Warren, O., manufacturers of a large variety of high-tension electric cables for ignition service have become affiliated with the Rice Leaders of the World Association.



An electro-hydraulic device for operating the reverse gear lever on the modern motor boat. Does away with long lines of control rods and gear. A small controller mounted on the bridge and a few wires does the trick instead. Will operate from full speed ahead to full astern faster than it could be done by hand.



Morris M. Whitaker, now associated with Tams, Lemoine & Crane as naval architect

known as Flyosan. While this chemical is primarily an insecticide it has a high antiseptic value and this together with the fact that it is non-poisonous and non-injurious to paints or fabrics gives it a large variety of uses and application.

Perhaps the most remarkable quality of Flyosan is its power to drive roaches and moths from their hiding places.

When the windows are closed and the room is sprayed thoroughly for a few minutes, flies and mosquitoes become suddenly apathetic, crawl listlessly across the wall and fall in a fatal faint before much time passes.

The stuff seems literally to gas all insects and yet possess no harmful effects on the smallest animal or the youngest child. Lice have been driven from canary birds with it; after rubbing a few drops in a little pet dog fleas fall off him stupefied; and bedbugs and ants are killed almost instantly.

Sal-Log

An interesting item of motor boat equipment has just been made public. This is a new type of ship log made by Hamilton & Hansell, Inc. We understand that details of this device will be announced shortly and the boat owner wants to watch out for it. Some of the finest yachts of international prominence are being equipped with this device.

Navy Adopts Flyosan

One of the latest wrinkles to be adopted officially by the U. S. Navy upon recommendation of Rear-Admiral Taylor, of the Bureau of Construction and Repair is a fluid



Lois Jean, a standardized 28-foot Belle Isle runabout is capable of attaining a speed of 30 miles per hour. Her power equipment is a Model M-4 Van Blerck motor which from the indications of the photograph is thoroughly capable

Flyosan is manufactured by the Colonial Chemical Corp., of Reading, Pa.

Oberdorfer Expands

Owing to the demand for products of their manufacture consisting of aluminum, brass, and bronze castings, finished bushings and bearings, and their well-known line of Oberdorfer Bronze geared pumps they have been compelled to build a new plant which will be one of the most modern of foundries and machine shops. They have purchased 19½ acres of land at Eastwood, N. Y., which is on the outskirts of Syracuse, N. Y., and increased their capitalization from \$500,000 to \$1,400,000.

Buildings will occupy 150,000 square feet of space all on one floor. Construction to be of steel and brick.

New departments will consist of Core Department, foundry, machine shop, and power house and two railroad sidings, one for incoming and the other for outgoing freight.

Thoroughly modern equipment is to be installed.

(Continued on page 114)

Service Delivered Is *the Test of Value*



CUT-PRICE tools satisfy the man who thinks of cost rather than value. Cheap tools do not satisfy the man who looks for value in service delivered.

The Marine field calls for the best. COES wrenches are made to satisfy the man who expects uninterrupted service under the most severe conditions. For 80 years they have satisfied the demands of the most exacting users.

Made only by

COES
WRENCH COMPANY
WORCESTER MASS.

Seven sizes
6" to 21".
Every wrench war-
ranted fully.
From any reliable
dealer.



THE INSTRUMENT OF QUALITY
Sonora
CLEAR AS A BELL
PORTABLE

ABOARD the yacht or trim cruiser music is most acceptable to pass the time away. If becalmed, or if the engine should quarrel with you, it is the Sonora Portable which offers you a source of unalloyed pleasure instantly available.

The Sonora Portable is of typical Sonora quality and when you wish to dance there is no need for elaborate preparations. The Sonora Portable is always ready.

The case of the Sonora Portable is of the finest calf-skin, leather lined, provided with well made spring locks and weighs only 15 pounds complete.

The dimensions are 10 $\frac{1}{4}$ " long, 10 $\frac{1}{4}$ " wide, and 10 $\frac{1}{2}$ " high. A strong leather handle is provided. The motor is of the "double spring" type.

The Sonora Portable, which plays perfectly all makes of disc records, all sizes, is unequalled for convenience, compactness, excellence of tone, and important features of construction.

Enjoy the pride of possessing a Sonora

Price \$75

A complete line of upright and period models is available at prices from \$60 to \$2500. Write for catalog 18.

Sonora Phonograph Co., Inc.

George E. Brighton, President
New York:

Fifth Avenue at 53rd Street 279 Broadway

Canadian Distributors:

L. Montague & Co., Toronto

Dealers Everywhere



American Boats Are Ready for World's Championship

(Continued from page 11)

winner, if the race day brings forth average summer weather found at sea, nothing in the world should be able to beat Whip-po'Will. If the racers have extraordinary smooth waters, Miss America will take her crew around the course faster than any two men have ever driven a boat before. So why should not the American team win? We have the boats, the motors and as well as the crews which are game to the core—an unbeatable combination.

A few words about the American boats should be interesting. Miss Detroit V is the largest of the three. She is about 38 feet in length by something over 8 feet beam and looks like a mighty sea-going cruiser. She is a Chris Smith design pure and simple. She has all the ear marks of the Smith 20-footers—just enlarged, one step in the underbody, a bow rudder, broad bow and wide stern, a sharp chine and all the other details so common in the 20-footers. Her power consists of two twelve-cylinder Liberty motors driving twin screws. The motors are set way aft in the boat and follow the usual practice of leading to a reduction gear forward. These gears drive the propeller shafts at about one and one-third engine speed. The engineers sit aft of the motors while the boat is steered from a small cockpit forward of the motors. There is no engine control from the forward cockpit.

In workmanship and finish the whole outfit is about the finest ever turned out by a builder of racing boats. The installation of the motors appears perfect and there is an abundance of room both outside and between the motors for the mechanicians.

In her actual running Miss Detroit V does not fall short of her other excellent characteristics. The self-starters get her motors under way at the first turn, and when the gears are thrown in, there is no hesitation about planing. The big hull seems to get up on top of the water at once and starts off more like a locomotive at express train speed than a race boat. While no official speed trials have been held or speeds given out, yet it is certain that on the short stretches which Miss Detroit ran on the day she was officially launched her speed did not fall much short of seventy miles an hour. This boat was shipped from Detroit about the middle of June and is scheduled to sail on the S.S. Adriatic from New York on July 3.

Whip-po'Will, Jr., while perhaps the smallest of the three boats which will be sent abroad as far as overall length is concerned, is by no means a strictly smooth water boat. Her performance at Toronto in 1918 showed she could stand the biggest of seas and maintain her speed continuously at the same time. The heavy twelve-cylinder motor which drove Whip-po'Will to fame in years gone by has been taken out and discarded. In its place there are two sixteen-cylinder American-built Bugatti motors. The total power plant of thirty-two-cylinders with its 128 valves weighs less and occupies a smaller space than the single old motor.

The two new motors in Whip-po'Will, Jr., total about 900 h.p. It is doubtful

whether all of the power will ever be required at one time, but it has been the idea of Commodore Judson to have a considerable reserve so that his motors would never have to be driven to the limit, always the most critical moment in any motor's life. A complete third motor is being taken abroad so that there will be plenty of spare parts should any fail. This is a necessary precaution, for according to the rules of this race every boat, engine accessory and part must be made in the country which the boat represents. Should even a rudder be broken it will have to be repaired or replaced by material brought from America by the racers.

The two motors in Whip-po'Will are connected in tandem and are geared through a central gear box to one propeller shaft which will have to transmit the total 900 h.p. if called upon to do so. Such an arrangement while an ideal one theoretically has never been worked out practically as yet in a racing boat. Several owners have tried it in the past but in every case some vital part has failed at a critical moment. Should the construction details be overcome in Whip-po'Will's installation, probably no better arrangement could be designed than the one being followed in Whip-po'Will.

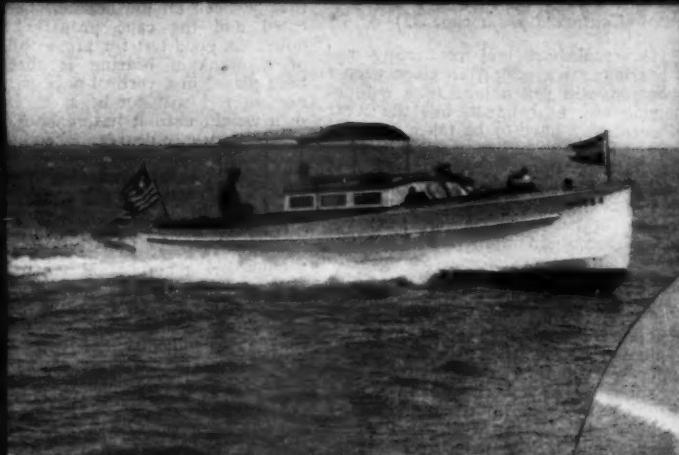
The one man chiefly responsible for Whip-po'Will's power plant is Henry Pohl, whom MoToR BoatinG readers will remember as former driver of the famous Kitty Hawks and Hawk Eyes. The Bugatti motors were built by Duesenberg under the personal supervision of Mr. Pohl so he knows them from spark plug to crankcase.

Whip-po'Will will be steered by George Reis who drove her so well at Detroit, Toronto and Lake George in the past. Pohl will probably act as engineer and will be assisted by James Kneeshaw if it is found advisable to carry a crew of three.

At the time of this writing Whip-po'Will had not been given her official trials, but these were planned for the third week in June. As she is to be shipped from New York on July 3, nearly a month's time will be available in England for her final tuning up trials.

The third boat of the American team is Miss America, also owned by G. A. Wood, of Detroit. On this boat the greatest hopes are placed for very extreme speeds in smooth water. Miss America is approximately 28 feet in length and her power plant consists of two twelve-cylinder Liberty motors. This boat like the other Wood craft is driven by twin screws. In appearance Miss America seems as though she should be very fast. She also is a development of the 20-foot Smith hulls, although considerably more husky. Both she and Miss Detroit V have double planked mahogany hulls.

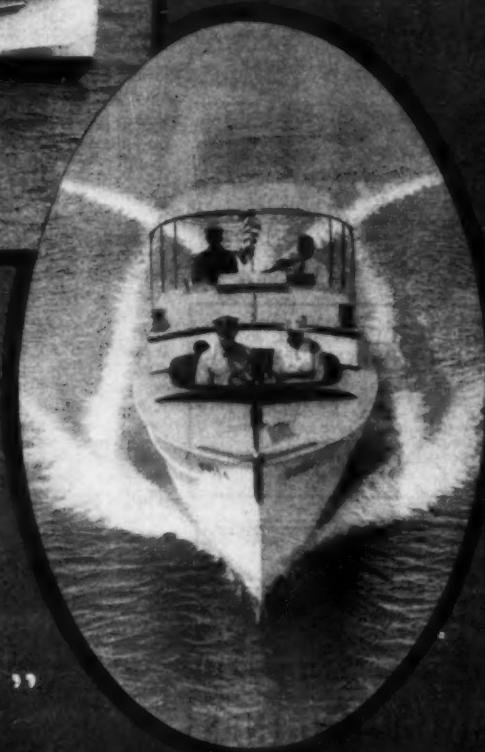
Gar Wood, the owner of the Detroit boats, will drive one of his boats and his brother will act as helmsman of the other craft. Jay and Bernard Smith will act as mechanics. To date the crew of Wood-Smith has never been beaten in any race in which they have started during their ten years of motor boat racing. May this record long remain unbroken.



Shawnee III

Scripps

*"The Motor
that Crossed
the Atlantic "*



MR. HAND'S LATEST

The master of V-bottom design and construction has lately added another successful number to his constantly growing list of special designs.

This is the "Shawnee III" designed and built for Mr. Addison G. Fay, of New York and Useppa Island, Florida. This smart craft was planned especially for Florida fishing and is one of the most successful boats yet produced for this sport. It has excellent speed, splendid control and is altogether a most decided success.

Mr. Hand's wide experience in handling high class motors of every description qualifies him to speak with authority and conviction—with him a motor is either right or it isn't used again. The large number of Scripps installations in Mr. Hand's boats this year is a strong endorsement of Scripps ideals. Shawnee's power plant is a Model D-6, six cylinder 60 to 75 H.P. installed under a trunk amidship. Its pep, power, cleanliness and quietness of operation inclined Mr. Hand to the statement: "The power plant behaves beautifully."

Other Scripps models are made in two, four and six cylinder medium duty and high speed 10 to 75 H.P., gasoline or kerosene.

SCRIPPS MOTOR COMPANY

631 Lincoln Avenue

Detroit, Michigan, U. S. A.

EVER-WARM SAFETY SUITS
YOU CAN'T CHILL—YOU CAN'T DROWN
Approved and used by U. S. Navy
Ask for Pamphlet 23—it tells the whole story.
National Life Preserver Company
11 Broadway, New York, Tel. Bowery Green 8609

Tillinghast Racing Green

"PROVED BY TEST"

"Always a clean racing bottom"
for either the yacht or commercial boat be it built of steel or wood.

TILLINGHAST PRODUCTS CORP.
299 Broadway New York City



Hunting Boats, Canoes, Rowboats, Fishboats and Motor Boats. Catalog Free. Save Money. Order by Mail. Please state what you are interested in.

THOMPSON BROS. BOAT MFG. CO.
1907 Ellis Avenue, Seattle, Wash.

RADIO TELEGRAPH and TELEPHONE EQUIPMENT

We design and manufacture complete, simple, rugged and compact radio equipment for steam yachts, and motor cruisers, for communicating over any distance. Catalogs furnished on request.

WIRELESS SPECIALTY APPARATUS CO.
Boston, Mass.

Write for Bulletin No 159



REBUILT ENGINES

Paragon Reverse Gears
At 30 Per Cent. Discount
C. B. HAMBLEN & CO.
100 Atlantic Ave. Boston, Mass.

Pressure



Oil
Stoves

Made in one, two, three or more burners. Complete catalogues on application to manufacturers.

WILLIAM H. OTTO METAL GOODS CORP.
401 St. Pauls Ave. Jersey City, N. J.

The Gordon Silencer and Under-Water Exhaust With Fresh or Salt Water Fittings
F. O. B. Cleveland
\$12.00

The Gordon Propeller & Mfg. Co.
9001 Desmond Ave. Cleveland, Ohio

"WOLVERINE"
Heavy Duty Marine Engines.
Kerosene-Gasoline-Alcohol Suction Producer Gas.

WOLVERINE MOTOR WORKS
Bridgeport, Conn., U. S. A.

Adjusting Worn Motor Bearings

(Continued from page 35)

THE crankshaft and connecting rod bearings of a motor, if given proper lubrication, will run a long time without requiring any adjustment, but the wear will eventually have to be taken up. To permit of ready adjustment, the main crankshaft bearings are in most cases made in two pieces, although in many one and two-cylinder, two-cycle motors having two bearing crankshafts, they are made of bronze in one piece. Crankpin bearings are of necessity made in two pieces in any case and are therefore readily adjusted.

The wear in split bearings is, of course, much more easily taken up than in the one-piece type as the two halves are usually separated by a number of very thin shims about one-thousandth of an inch thick, the removal of one or more of which takes up the wear. With one-piece bearings it is usually necessary to put in new, although in some cases a thin bronze bushing can be sweated-in on the inside or new babbitt put in to take up the wear.

In adjusting any type of bearing, care is required to see that there is uniform contact all over, otherwise it will soon wear loose again. Where shims are provided, oftentimes the removal of one or two on each side will take up the wear, but if more than three or four have to be removed, it will be necessary to do some scraping to make the bearing fit properly. This work will require care and patience and possibly all of the following tools in addition to the regular wrenches, etc., namely, bearing scrapers, a tube of Prussian blue, a sheet of fine emery cloth, and possibly a lapping tool to smooth up the shaft.

With the bearing caps removed, the shaft can be examined for scratches or scores due to lack of lubrication or other causes. If there is any roughness, the shaft should be smoothed up carefully with a file and emery cloth or by using the lapping tool which makes a better job. The lapping tool consists of two pieces of lead or hard wood about half the width of crank pin with a half-round hole in each to fit the shaft and made so as to be clamped tightly together. In use, a paste of oil and emery powder is placed between the blocks, the tool is clamped firmly to the crank pin and turned around the shaft, at the same time being moved from side to side. This operation is continued with occasional renewal of the abrasive, until the shaft is smoothed up properly. Of course, if badly scored or out of round, the shaft must be placed in a lathe and trued up by an expert.

To adjust the bearing, remove an equal number of shims from each side, say one or two, and replace the bearing cap, tightening it down. If the removal of three or four shims is not enough to take up the wear, it will be necessary to refit the bearing by scraping so that there will be an even contact at all points. To do this, a thin coat of Prussian blue is spread evenly over the crank pin, the bearing cap is tightened firmly in place with the usual bolts, and the shaft revolved several times. The high places on the bearing will, of course, be indicated by the blue marks on it and these are carefully scraped down with the scraper. Another coat of blue is put on the crank pin, the bearing cap replaced as before, and the process repeated until contact over the entire surface of the bearing is obtained.

This is the procedure in fitting any type of two-piece bearing. When the main

bearings are properly adjusted, the shaft will not turn unduly hard when rotated by the leverage afforded at the rim of the flywheel, all the bearings being lubricated and the caps properly tightened down. A good test for proper adjustment of a crankpin bearing is that, having been placed in a vertical position, the connecting rod will not begin to fall of its own weight until it has reached an angle of about twenty degrees with the vertical. When fastening bearing caps, the screws should be set up gradually, first on one side and then on the other, until they are all down snug. This will ensure proper seating of the cap and a uniform pressure on the bearing at each end.

One-piece main bearings can obviously be used only on the ends of the shaft and for this reason they are seldom employed except on one or two-cylinder motors, principally of the two-cycle type. When these bearings are worn, it is best to put in new ones as it is more satisfactory, although it is possible, with the proper equipment at hand, to refit the worn one. If the bearing has a sufficient wall thickness, it can be bored out so that a bushing of bronze can be shrunk and sweated in, making a fairly satisfactory repair. If the bearing is babbited, this is readily melted out, renewed and fitted.

With the all-bronze bearing, if it is desired to bush it as above mentioned, it is carefully centered in a lathe and the hole bored out, taking off at least a sixteenth of an inch so as to make the hole a full eighth of an inch larger than the shaft diameter. A piece of bronze tubing of the proper size is now turned to a snug fit in the bored-out bearing. The inside of the bearing is coated with solder and heated so as to expand it. The cold bushing is quickly pushed in and when cool the outside has shrunk tightly upon it, the solder in between making the whole practically one piece.

The shaft should be put in the lathe and carefully trued up, if necessary, and polished before the bearing is fitted to it. The bearing must be accurately centered in the lathe as to the outside diameter so that when bored out, the hole will be exactly in the center. If the bearing is babbited lined, the old babbitt should be melted out and new put in so that it can be refitted. This must be carefully and properly done otherwise there is danger of the babbitt not being perfectly firm and solid, so that it will break down under the pounding and cause a loose bearing.

In these various ways bearings of either type can be put into proper shape so that they can be used again and will give as good service as before. Care and some experience are, of course, necessary and expert assistance may be required for some of the work, but any one with mechanical ability should be able to do a satisfactory job.

A. L. M., New York, N. Y.
(Continued on page 62)

Advent of Motors in Far East

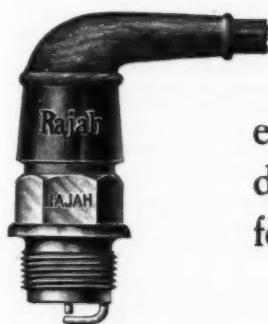
(Continued from page 22)

cargo, such as coal, bricks, stone, lumber, etc., is still carried by junks and schooners, but hundreds of the little motor cargo boats are already in operation, putting around the coasts and through the beautiful Inland Sea, and the boatmen say that it will only be a question of time until they displace the windjammers for every sort of cargo except the cheapest. They clutter up the ocean with smells and noise and are not as picturesque as the junks, but such is the march of progress, even in far off Japan.

Rajah waterproof plugs for unprotected engines



You are certain of clean, sure, economical ignition when you equip your motor boat with Rajah Waterproof Plugs.



Waterproof
Rajah Plug \$1.50

Giant
Rajah Plug \$1.25

Standard
Rajah Plug \$1.00

Neither rain nor heavy seas affects the Rajah's efficiency. Whether your success or pleasure depends upon *record speed or emergency power*, you'll feel safer when you've installed the Rajah.

Rajah Waterproof Plugs are superior to all others for Motor Boats, Tractors, Airplanes, Motorcycles and all Unprotected motors. Furnished with Rajah Regular Terminal, fitting any cable or Rajah Ferrule Terminal, if size is given.

If Rajah Spark Plugs are not sold near you—don't accept an inferior plug. Send us your dealer's name and we will see that you are supplied, postpaid, at the prices here listed.



Rajah Thrust Clip
Terminal



Rajah Regular Clip
Terminal
Fits any size cable



Rajah Primary
Terminal



Thumb Nut
With all Rajah plugs
unless otherwise ordered

The Rajah Thrust Clip, Hook Clip, Short Clip and Primary are furnished with ferrules to fit any sized cable. Look for the Trademark on every clip.

RAJAH SPARK PLUGS

Manufactured by Rajah Auto-Supply Co., Bloomfield, N. J.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating

Universal Specialties

Lowest possible prices on all marine supplies.

Class 1 Outfit \$6.00

**UNIVERSAL MOTOR
BOAT SUPPLY CO.
Atlantic Highlands, N. J.**

CAPE COD 20-FT. DORY LAUNCH

The Safest little family boat built. Motor housed in.

Also

12' Sail Dory 14' Outboard Motor
14' Shallow Draft 16' Row Boat
17' Life Saving Dory 12' Row Boat

CAPE COD SHIPBUILDING CORPORATION
Builders of craft to 150' length, or 18' draft.

Winter Storage

367 Main St., Wareham, Mass.
New York Show Rooms, 412 Eighth Avenue, New York City

IMPROVED THERMEX SILENCER

Increase Revolutions, No Back Pressure!
Cannot clog, nor collect salt; water cannot flow back to cylinder. No heating, no odor. Used free or under water—adjustable discharge. Lightest, easiest to install. Free booklet shows why. Send for it today.

CENTRAL MFG. CO.
155 Liverpool St. East Boston, Mass.

Quayle Oil Engines

FOR MARINE SERVICE

COMMONWEALTH MOTORS CO.
326 W. Madison St. Dept. E-1 Chicago, Ill.

Paint DEVOE Paint

John Devoe & Sons, Inc.
Paints, Oils, Varnishes, Lacquers
United States Paint Company
DEVOE & RAYMONDS CO., INC.
NEW YORK CHICAGO

7 out of 10 shooters use



Smokeless Shotgun Powders
E. I. DU PONT DE NEMOURS & CO., INC.
Wilmington Delaware

REVERSE GEARS
GUARANTEED SATISFACTION
The Double Drive for Power
GIES GEAR COMPANY
100 Street, New York, N. Y.

"Reliance" Steering Gears

AND
Deck Controls
The Proper Wheel
for every type
of boat



Wise for Liberties
W. S. HALL CO.
Rochester, N. Y.

Diagonal Slot Repair

(Continued from page 60)

WHEN overhauling marine engines, naturally the most important thing is to see that the bearings are snug and smooth inside, and if not, they should be refitted or replaced.

A few years back it was considered proper to replace slightly worn bearings with new ones. New bearings are not to be had in many cases or the prices asked for same are so decidedly high and out of all proportion that many motor boaters have concluded to let the old engine run this year on worn bearings until she stops. This, however, is not necessary as repair of bearings is not extraordinarily difficult.

In heavy-duty two-cycle engines and others where main bearings are usually of bronze (not split), the most practical way is to drive them out of the motor end plates or block, as the case may be, with a fitted hardwood plug, to prevent injury, and slit it with a fine-tooth hack saw diagonally across bearing; a thin brass shim is then soldered to the bottom of the bearing. Shim need not be more than $\frac{1}{4}$ inches wide and at least the same length as the bearing. Bearing when driven home presents an even bearing surface all around and will hug the crankshaft. When a bearing is simply sawed through in a straight line and then shimmed and set, it grips in two places, and to all intents and purposes it feels like a tight fit, but after an engine has run for several hours the bearing becomes practically as bad as it was before.

Where split bearings are used the procedure is somewhat different. A piece of garnet paper should be tacked to a perfectly smooth board and the bottom half of the bearing rubbed gently across same to cut away some of the bearing metal on the edges. A thin shim should then be fitted around the bottom half of this bearing. The reason for merely taking off some of the lower bearing is that the greatest wear comes on the bottom bearing and by removing a small portion of the bottom half and shimming up same, the bearing center is still in proper alignment with the crankshaft and a very good bearing will be the result.

Where plain bronze split bearings are used, same may be cut down as with the babbitt bearing, and if the light brass shim stock on hand is still too thick the bottom bearing half can be covered with a lamp black and water mixture on the inside (crankshaft side) and the other side coated with soldering flux or washed with a soldering acid and the bearing dipped into molten tin, always remembering that the hotter the bearing and tin is, the thinner will be the deposit of tin on bearings. It is necessary in all cases that crankshafts be tested with a calipers to make certain that they are not out of round before refitting worn bearings. A worn, fine cut file may be safely used to cut down the crankshaft if same is egg shaped, as is the usual condition, and shaft can be finished off with a strap or a piece of canvas covered with valve-grinding compound. Particular attention should be given to the cut-down edge of split bearing which should be beveled at a good angle so as not to scrape oil from the crankshaft.

Where long bronze bushings are used on wrist-pins they can also be diagonally split and dipped into molten tin as for bronze split bearings. With connecting-rod bearings the same procedure is followed as with the regular split bronze and babbitt bearings.

F. A. K., New York, N. Y.

Advertising Index will be found on page 118

Nautical Instruments

underlighted Compasses, Course Protectors, Bearing Finders. Every navigator should have them. Send for interesting catalogue. Address Box 45.

Marine Compass Company
Bryantville, Mass.



Miller Marine Engines

GASOLINE OR KEROSENE

Sold for nearly twenty years solely on the basis of reliability and efficiency. We offer you a Miller motor to meet your requirements, be it for a small boat, a heavy sea-going cruiser or work boat. **TEN MODELS.** Each one designed for a specific service. Write today for particulars.

MILLER ENGINE COMPANY

2329-2331 No. Tallman Ave. Chicago, Illinois

AUTOMATIC BILGE PUMP

!Rocking of the Boat Keeps It Dry

Entirely Independent from Engine.

"A tireless worker at a troublesome job!"

ROCK-A-WAY PUMP CO.

61 Berham St. Dept. A West Somerville, Mass.

Roebling Launch Steering Cable

Metallic Cord Center



Strong, Reliable, Durable

Send for Folder No. A-375

JOHN A. ROEBLING'S SONS CO., TRENTON, N.J.

NO MOTOR BOAT COMPLETE WITHOUT

STEWART CUSTOMBILT NECESSITIES

SEE OUR AD IN NEXT MONTH'S ISSUE

World Batteries Are Best

Plates won't buckle and are always damp. No wood, paper or celluloid separators—won't splash—can't be over charged.

47% greater efficiency and 3 year guarantee.

Write for particulars

WORLD BATTERY COMPANY

1235-37 Wabash Ave. Chicago, Ill.
Sherman Bros. Co., 200 S. La Salle Street, Chicago
Sole Export Distributors

BOAT CEDAR

Just received a few carloads of choice Cedar. Can make immediate shipment. Good assortment of sizes. Also on hand: Oak, Mahogany and other woods for boat building.

WM. P. YOUNGS & BROS.

35th Street and East River, New York City

4-Cycle Engines of Quality

Six sizes—light, medium, and medium heavy duty. 3 h.p. to 20 h.p.—1 to 2 cylinders.

Gasoline or kerosene. Suitable for workboats, fish skiffs, sampans, pleasure boats, etc. Working parts on lightweight models, interchangeable with Ford engine parts.

Live agents wanted in all parts of the world

SEATTLE-STANDARD ENGINE MFG. CO.

Seattle, U. S. A.

SINCLAIR OILS



Runabouts Exclusively

THE HACKER BOAT CO.

has the exclusive services of the world's foremost fast displacement boat designer—Mr. John L. Hacker, N.A.

They have the very best artisans available.

The Hacker Boat Co. Keeps its delivery promises.

SATISFACTION

is guaranteed with

**Design, Workmanship, Seaworthiness, Speed
and Comfort**

THE HACKER BOAT CO.

*Are the First Purveyors of ACTUAL
40 Mile Per Hour Displacement Boats*

Their

40 MILE SPECIAL

Is the Ideal Family Runabout

Powered with a 6 cyl. Hall-Scott motor if one wants the greatest speed efficiency with this design or with a 4 cyl. Hall-Scott if one is satisfied with 33 m.p.h. or better.

If you write to The Hacker Boat Co., 323 Crane Ave., Detroit, Mich., you may rely upon a prompt, courteous and edifying reply.

KAY LOG

DURKEE LOG

ABSOLUTELY ACCURATE.
LASTS A LIFETIME.
NO RUSTING.

These Logs Register at any Speed. The Durkee Log may also be used to Obtain Speed of Engine

CHAS. D. DURKEE & CO. INC.
TRADE MARK
MANUFACTURERS OF MARINE HARDWARE

Nos. 2 & 3 SOUTH STREET, NEW YORK CITY

Berling Magneto

WORTH MORE DOES MORE

ERICSSON MANUFACTURING CO.
BUFFALO, N. Y.

HESS MONO-MARINE

Most serviceable and economical heavy duty 4-5 H.P. engine. Many of its component parts interchangeable with standard Ford engine parts. Complete engine includes—Hot-Spot Manifold, Bosch High Tension Magneto, Stromberg Carburetor, Weedless Propeller—complete only \$145.00.

Send for catalog.

DEALERS: Our agency offers the most popular and the best seller on the market.

HESS MOTOR COMPANY
120-130 Sherman St., Detroit, Michigan

Run Your Boat on Kerosene

Cheaper than gasoline and equally good when used with the

OLSEN KEROSENE VAPORIZER

Sold on 30-Day Money-Back Guarantee

Fits any 1" to 3" carburetor. Perfect combustion—no waste, smoke, or smell. Greater flexibility and mileage—less carbon. Fuel costs greatly reduced. Send for details.

U. S. VAPORIZER COMPANY
214 STATE STREET BOSTON, MASS.

STEARNS MCKAY MARBLEHEAD ANTI FOULING GREEN BOTTOM PAINT

FOR STEEL
OR
WOOD
STAYS CLEAN

Gives the greatest efficiency with the smallest fuel consumption.
Semi-enamel White for topsides.
Stearns-McKay Mfg. Co.
Marblehead, Mass.

WHICH BOAT WASTES FUEL?

America's Finest Motor Boats



Whatever you want—Runabout, Speed Boat, Cruiser, Row-boat or Canoe.

There's a **Racine Wis** Made for you

—or we will design and build one to meet your needs.
Tell us the type of boat in which you are interested and we will mail you our special catalog immediately.

RACINE BOAT COMPANY, 1812 Clark St., Racine, Wisconsin

Crockett's Spar Composition
is the
only
varnish
which
will last
a season
on a
deck

THE DAVID B. CROCKETT CO.
Bridgeport, Conn.
The Bissell Varnish Co., Successor

Southland 45-Foot Express Cruisers

A stock boat as fine as any built to order. Selected white oak frames, clear cypress planking. Inside finish white, with mahogany trim; outside finish in mahogany.

Length 45'-0" Cruising radius 375 miles
Beam 10'-6" Accommodated four and crew
Draft 3'-3" Speed 22 knots and better

Power—One 8 cylinder Model FM Sterling

SOUTHLAND STEAMSHIP CO.

Shipbuilding Department — — Savannah, Georgia

MARINE ELECTRICAL EQUIPMENTS SHIPS TELEGRAPHS

SINCE 1845 WE HAVE BEEN DESIGNERS AND MANUFACTURERS OF COMMUNICATING AND SIGNALLING SYSTEMS FOR NAVAL AND MERCHANT VESSELS.

CORY ELECTRICAL AND MECHANICAL TELEGRAPHS AND LIGHTING EQUIPMENTS ARE THE RECOGNIZED STANDARDS.

CHAS. CORY & SON, Inc.

NEW YORK
290 Hudson Street
Main Office and Factory

PHILADELPHIA
207 Market Street



SEATTLE
83 Columbia Street

SAN FRANCISCO
11 Mission Street

The pleasures of boating enhanced by the feeling of Security one enjoys if your Craft is protected by *GOOD WOOLSEY PAINT and VARNISH—TOP and BOTTOM.*

WOOLSEY COPPER PAINTS AND MARINE PAINT SPECIALTIES ARE THE WORLD'S STANDARDS

Copper Paints—Brown, Red and Green, Yacht White, Deck Paint, Marine Mixed Paints, Metal Bottom Paint, Seam Paint, Seam Compounds, Sparon (Spar) Varnish, Engine Enamels, Canoe Enamels, Boat Bottom Seam Compound, Copper Bronze, Light Sea Green and Regatta Green Yacht Bottom Paints, etc.

C. A. WOOLSEY PAINT & COLOR CO., Jersey City, N. J., U. S. A.

Send for our Marine Booklets, Free—Contain Color Spots and information "How to Paint a Boat."

RITCHIE

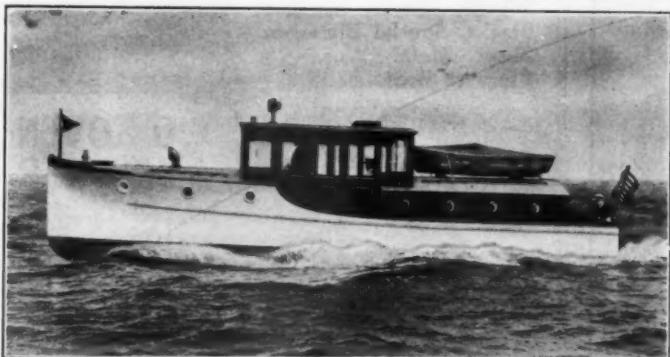
For Seventy Years Ritchie Instruments have been the recognized Leaders in the Nautical Field

Your runabout cruiser or yacht is not properly equipped until Ritchie Instruments are installed. Flat Card Compass, illustrated, has great magnetic force, making the compass much easier to adjust in iron ships. 2 in. to 10 in.

Write today for your copy of our catalog. It contains the compass best suited for your boat.



E.S.RITCHIE & SONS
110 Cypress St., Brookline, Mass.



Rochester 40 Foot Enclosed Bridge Cruiser

ROCHESTER "BILT-RITE" CRUISERS

Offer the best possible means of insuring a healthful and pleasurable vacation. They are fully found in all the necessities and conveniences of life afloat, and their wonderful Deck Cabin is the last word in modern motor boat architecture. It makes every trip a pleasure regardless of the weather.

Our 40-foot size in stock for immediate delivery. Ask for our catalogue giving full details. We have equally interesting sizes 36, 45 and 55 feet.

ROCHESTER BOAT WORKS, INC.

Charlotte Station

Rochester, N. Y.

You Can Build Your Own Boat

and save 2/3 the cost

By the BROOKS K. D. SYSTEM



Brooks Boats are handsome, seaworthy, up-to-date in design and easy to build. We also build complete boats.



The Brooks Guarantee:
Your Money Back if
You Are Not Satisfied
*Send for catalogue
showing all models.*

BROOKS MFG. CO., 1101 Rust Ave., Saginaw, Mich.

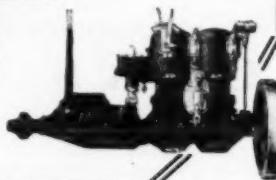
CAILLE

8 H. P. UNIT MARINE MOTOR

This motor is ideal for the average pleasure launch up to 25 feet in length. It has reversing gear mounted on same bed as engine assuring perfect alignment of gears and shaft. Simple, dependable, durable.

Other Caille Motors in sizes from $\frac{3}{4}$ to 30 H.P.—standard and heavy duty types—one to four cylinders. Tell us length, beam and draft of your boat. We'll tell you about the motor best meeting your needs. Ask for catalog.

The Caille Perfection Motor Co.,
47 Caille Building, Detroit, Mich.



ONE WAY ONLY—THE BEST WAY—BUY!

We Sell Our Sets

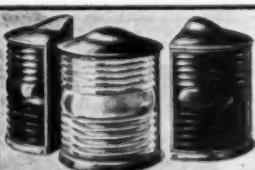
Wireless for Ship and Land Stations

CUTTING & WASHINGTON RADIO CORPORATION

GENERAL OFFICES

6 and 8 West 48th Street, New York, N. Y.

Let your deck fittings
**EMPHASIZE
QUALITY**
IN YOUR BOAT



Erico

Electric Running Lights
accentuate class and cannot rattle



Send for circular
HUBBARD H. ERICKSON & CO.
Marine Equipment
3037 to 3045 N. Western Av. Chicago

A Hand Tool Producing Accurate Results That Surpass an Expensive Power Driven Machine

Adjustable on all types of motors.
One simple operation for adjustment.
Guaranteed accuracy to one-quarter thousandths of an inch.

Can be operated without removing shaft from engine.

A Peters' Crankshaft Grinder will true egg-shaped crank pins in one-fifth the time ordinarily required by any other method.

Price, \$75.00.

Aluminum Brazing Solder Company
Widener Building
Philadelphia, Pa.



PETERS
CRANKSHAFT GRINDER

BLOOD BROTHERS UNIVERSAL JOINTS



Over-sized Bearings
Positive Lubrication
Unfailing Service

BLOOD BROTHERS MACHINE CO.

Pioneer Builders of Universal Joints
ALLEGAN, MICH.

Sootless Spark Plugs

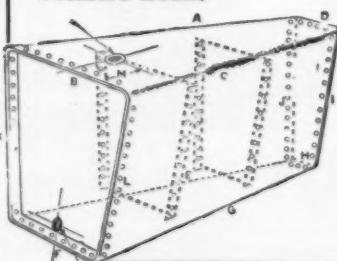
The Right Combination

of design, materials and workmanship, makes a perfect spark plug. Sixteen years of spark plug making have taught us this right combination. Correct design, big brass jacket that won't rust; mica insulation that won't crack, break or deteriorate, and perfect workmanship, make Sootless Spark Plugs the ideal plugs for all internal combustion engines. Price \$1.50—the cheapest spark plug in the long run.



OAKES & DOW CO.
308 Atlantic Avenue, Boston, Mass.

Gasoline Tanks, Air Whistle Tanks, Mufflers, Stacks, Special Plate and Sheet Metal Work for Pleasure Boats.



**L. O. KOVEN
& BROTHER**

Main Office,
158 Ogden Ave.,
Jersey City, N. J.

Branch, 50 Cliff St.,
New York City.

The Great
2-CYLINDER
KOBAN
ROWBOAT MOTOR

For a summer of real outdoor delights, a Koban is indispensable. It takes you where you will, and when you will, with no back-breaking rowing to mar the pleasure of your trip.

The Koban will "run circles" around any other rowboat motor on the lake or river.

The two cylinders fire at the same time, neutralizing the shock. Only by this 2-cylinder opposed construction can you avoid the vibration that makes riding disagreeable, opens seams and ruins rowboats. Special tilting device, for shallow water and beaching.

Write for catalog and full information. Dealers and local agents wanted.

Koban Manufacturing Co.
246 SO. WATER ST. MILWAUKEE, WIS., U.S.A.

We also make an Inboard Engine for small boats and canoes. Circular 80 tells all about it.



Does
Not
Shake
the
Boat

WE regret to have to announce an increase in price of our standardized 32 ft. cruisers. Owing to the increased cost of labor and materials over prices in force when we began production and the added cost at present of obtaining delivery of material we can do nothing but increase the price of our "International 32" Raised Deck Cruiser from \$3500 to \$3950 and our "International 32" Bridge Deck Cruiser from \$4000 to \$4300. War tax of 10% not included.

We feel that you would rather pay this slight increase than see production cease, in which event you would lose the best opportunity you now have to buy a real cruiser at a price you can afford.

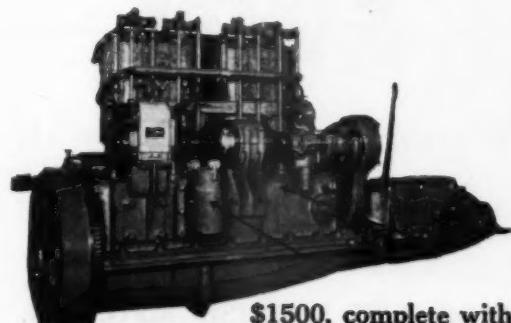
INTERNATIONAL SHIPBUILDING &
MARINE ENGINEERING
CORPORATION
Nyack, N. Y.



40 H. P. Medium Heavy Duty Motor

The crowning work of twenty years' motor building experience. If you have never felt the joy of riding "Knox powered" you have missed half the sport of motor boating.

Knox Motors Associates
SPRINGFIELD, MASS.



\$1500, complete with electric starter and reverse gear.

GRAY-PRIOR
FOUR CYCLE
MARINE MOTORS
Built up to a Standard—not down to a price

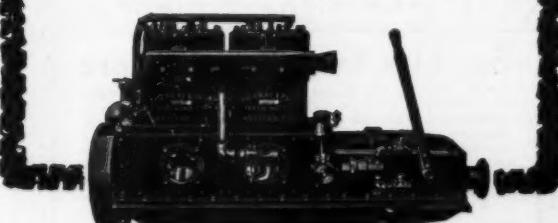
A Clean-Cut Power Plant

For Commercial Boats and Cruisers

Model D-4, Medium Heavy Duty
36 Horse Power Bore, 4½ inches Stroke, 8 inches

Write today for full description and prices

The Gray & Prior Machine Co.
56 Suffield Street
Hartford, Conn., U. S. A.



**Ignition and Lights
that Never Fail!**

Why let worry over the condition of your storage battery interfere with your pleasure? With a Weston Ammeter Model 281.

The Weston Ammeter, built with the precision of the finest watch, is the one absolutely dependable means of knowing that your battery is recharged properly. Write us.

Weston Electrical Instrument Company
28 Weston Ave., Newark, N. J.

DELCO-LIGHT

The Delco-Light Marine Set gives a complete electric light and power service, independent of the main engines. Delco-Light Company, Dayton, Ohio

DUPONT

DUPONT MOTORS, INC.
WILMINGTON DEL.

Established 1875
L. NICKERSON
YACHT SAIL MAKER
Awnings, Tents, Flags, Covers and Canvas Goods for All Purposes
TENTS TO RENT
173 STATE ST., corner COMMERCIAL BOSTON, MASS.

NUPRO MARINE GLUE
(American Standard)
INTRODUCED 1867

TRADE MARK
REGISTERED

eliminates the necessity of making certain repairs every year. Deck seams and seams in the hull below the water line can be made tight and kept leak proof with Nupro Marine Glue and Hull Seam Composition. For Sale by Leading Ship Chandlers and Hardware Dealers

NEW PROCESS CHEMICAL CO.
39-41 Cortlandt Street New York City

Richardson
BOATS

All types of quality boats Will help you enjoy your summer
Write for literature to No. Tonawanda, N. Y.

Richardson Boats are sturdy, seaworthy, and sure. And they are constructed with all the modern comforts that give pleasure, service and satisfaction to their owners. Knockdown frames or complete outfit of the highest type built at the lowest possible cost.

RICHARDSON BOAT COMPANY
370 Sweeney St. No. Tonawanda, N. Y.

Freeport Engine Co.
450 Freeport St.
Dorchester, Mass.
Engine Repairing and Overhauling of the highest class

Send Us Your Repair Work

We do nothing but engine repairing and we do it right. We make any part for any engine or complete engine to your order. We use only the best material and workmanship and give quick service. Send us your engine to overhaul and it will be as good as new. We do cylinder grinding, welding, etc., and maintain a repair and tow boat that goes anywhere within fifty miles day or night. We have a few second-hand engines that are real bargains. Tel. Dorchester 5573M.

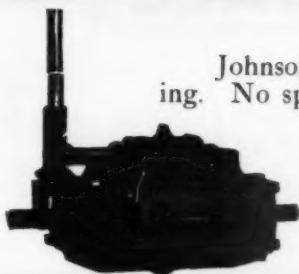
KAVRI
TRADE MARK
(Pronounced Courie).

Waterproof Spar Varnish
For all OUTSIDE AND INSIDE work. Guaranteed not to scratch white, turn white, in salt or fresh water, chip, crack or bloom. Try it on your boat. Sold everywhere.

BROOKLYN VARNISH MFG., CO.
BROOKLYN, NEW YORK

THE JOHNSON MARINE REVERSE GEAR

THE RELIABLE GEAR



Johnson Gears remove many of the unpleasant factors from Motor Boating. No spatter of grease from the gear, no grinding, no racking noise, no heating and sticking—and most important, no annoyance of a break-down to put the boat out of service in mid-season.

See that your motor is equipped with a Johnson—the Reliable Gear.

Write department 25 for our catalog.

THE CARLYLE JOHNSON MACHINE CO. MANCHESTER, CONN.



MASCO MOTOR WASTE

The Best Motor Waste in the Handiest Form

A selected waste, compressed in a strong cloth bag.

The ideal waste for motor boat users, automobilists, and for home engines and workshops.

The man with a motor is always sure of a clean fine waste—no odds and ends lying about. The bag, too, is useful.

Ask your dealer for
Masco Motor Waste in
the 1-lb. cloth bag or
write us direct



MASSASOIT MANUFACTURING COMPANY
FALL RIVER, MASS.

Manufacturers of Masco Products

MASCO MOTOR WASTE—DECK MOPS—CLEANING AND POLISHING CLOTHS—YACHT CAULKING AND PACKING

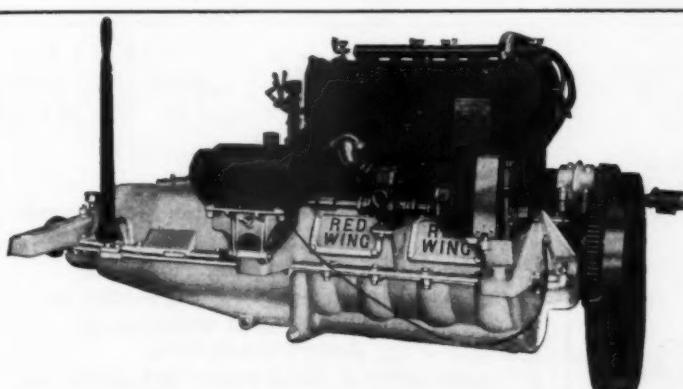
PURDY BOAT COMPANY

Designers and Builders of

EXPRESS CRUISERS

TRENTON,

MICHIGAN



Red Wing Thorobred
THE MOTOR WITH POWER TO SPARE

WHAT BAGDAD MISSED

The Caliphs of Bagdad certainly did have it pretty soft with their Magic Carpets and things "come easy" enough for the boy Aladdin that he should have been a sporty spender. But neither the Caliphs nor Aladdin ever tasted the joy to be found riding behind a Red Wing THOROBRED.

You'll say so when you own one.

10 to 40 H.P. for pleasure, work or speed; kerosene or gasoline.

RED WING MOTOR CO.

Dept. B. RED WING, MINN., U.S.A.

**LONG LIFE
LIGHT
WEIGHT**

WATERMAN MOTORS QUALITY PRODUCTS

Aluminum Crankcase
Copper Jacket

Built for Better Service
by

**Arrow
Motor &
Mach. Co.**

Newark, N. J., U. S. A.
Foreign Sales Manager
J. E. Sitterly
47 Broadway, New York, N. Y.

The Costly Way The Yale Way

The Yale Way is the One-Man Way

MANY delays in Shipping and Receiving Departments can be overcome with the installation of a Yale Chain Block and Trolley System. One man with the Yale Chain Block and Trolley accomplishes the handling of loads quicker and safer than a gang of men.

'From Hook-to-Hook-a-Line-of-Steel'

The new Yale 19D catalog shows you many ways to save money and increase production in your plant by using Yale Chain Blocks and Electric Hoists.

*Let us send you your copy.
For a factory locking equipment
use a Yale Master-Key System.*

THE YALE & TOWNE MFG. CO.
Makers of the Yale Locks
Stamford Conn.

ZUNDEL

This 6-volt Marine Horn combines distinctive marine appearance with a coarse heavy tone. The horn is of the vibrator type, with a very small current consumption; non-arcing, black enamel face, highly polished brass projector for salt water use. 9" high, 4" wide at base, weighs 2½ lbs.

Price \$9.50

Brass Hand Bilge Pumps. Double Action with 5 Foot Hose.
1½"x15" Price.....\$2.75
1½"x15" Price.....4.00

44 WHITEHALL STREET
Phone: Bowery Green 9157 New York

BOAT SUPPLIES**NILSON BUILT**

Model F. Marine Motor

Bore 3¾". Stroke 4". 10 H.P. at 1000 R.P.M.

Write to-day for specifications and price

New Jersey Motor Sales Co., Keyport, N. J.

AJAX MANIFOLDS,
GASOLINE AND
OIL TANKS

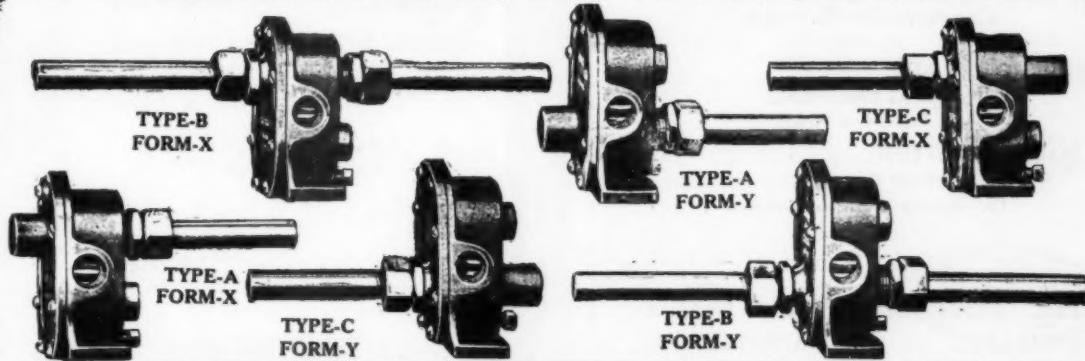
PUMPS

The finest power plant made will not operate properly if it is equipped with an inferior pump, whether it supplies water, fuel or oil.

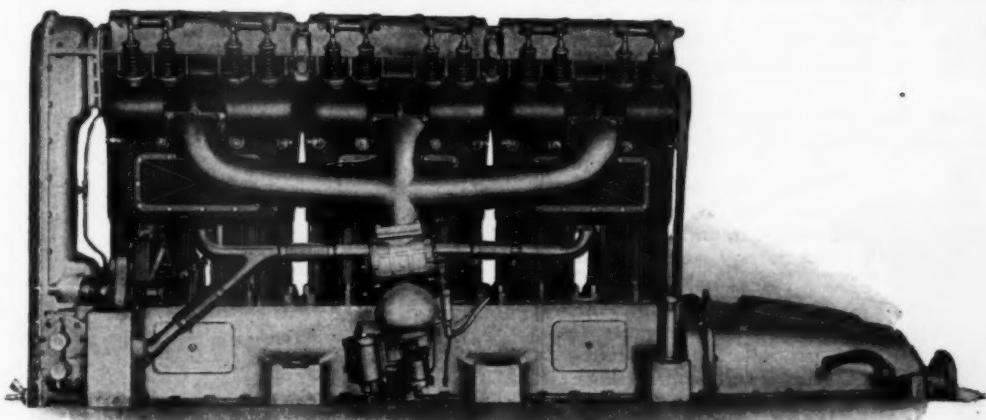
OBERDORFER BRONZE GEARED PUMPS

are built especially for marine use—they are made to withstand the hard service encountered in use on board boat—*Oberdorfer Bronze Geared Pumps* are noiseless, automatic, compact and reliable. The supply of water, fuel or oil is governed entirely by the motor—*there is never an over or under supply*. If you have ever had trouble with your pump you will find a world of satisfaction in the trouble-proof Oberdorfer. If you own a boat powered with an internal combustion engine you will be interested in our new book on pumps. Your copy is ready for you—it comes *free* on your request.

M. L. OBERDORFER BRASS CO., 816 E. Water St., Syracuse, New York



America's Premier High Speed Engine



Model J-6. Six Cyl. 7" x 9". 400 H.P. at 1500 R.P.M. Weight complete 3900 lbs.

Murray & Tregurtha Engines Are Designed and Built for the Yachtsman Who Demands More Than Mechanical Excellence

Murray & Tregurtha Corp.

Atlantic,

Mass.



BARKER MOTORS

Leaders in 2-cycle class for twenty years and still supreme in
Dependability Durability
Simplicity Serviceability

"Imitated but Not Equalled"

Moderate Price
 Conservative Ratings

DISTRIBUTED IN NEW YORK BY:
 TOPPING BROTHERS,
 122 Chambers Street.

IN MASSACHUSETTS BY:
 TOPPAN COMPANY,
 101 Haverhill Street, Boston.

Made by

THE BARKER FACTORY
 NORWALK,
 CONNECTICUT

DUNN MOTORS

2 to 16 H.P. — Four Cycle — Kerosene or Gasoline

Consider the Dunn Motor as a power plant for your boat. If you need a motor, from 2 H.P. up to 16 H.P., you can't find a better motor at the price, or a better value for your money.

Up-to-date, four-cycle design. Easy to start, accessible, easy to repair and economical to operate. Don't fail to write for catalog and see how Dunn Motors are built, and what their users say about them.

Prices below include complete equipment, consisting of suitable propeller, shaft, couplings, coil, spark plugs, mixing valve and oil cups.

16 H.P.
 4 Cyl.
 \$175.00

Single Cylinder, 2 H.P., Bore 3 1/2", Stroke 4", \$42.50
 Two Cylinder, 4 H.P., Bore 3 1/2", Stroke 4", 75.00
 Three Cylinder, 6 H.P., Bore 3 1/2", Stroke 4", 100.00
 Two Cylinder, 8 H.P., Bore 4 1/4", Stroke 5", 125.00
 Three Cylinder, 12 H.P., Bore 4 1/4", Stroke 5", 150.00
 Four Cylinder, 16 H.P., Bore 4 1/4", Stroke 5", 175.00

Foreign buyers—add 10% to above prices to cover cost of packing for export and delivering F.O.B. Steamer, New York City.

Write today for latest Catalog.

DUNN MOTOR WORKS
 Ogdensburg, N. Y., U. S. A.

CHASE
Leatherwove
MADE BY SANFORD MILLS
 SANFORD, ME.

"Tis good news to hear that Chase Leatherwove has been proclaimed "the better boat upholstery of today."

*Re-upholster with
 Chase Leatherwove*

Write for Samples

L. C. CHASE & CO. BOSTON
 New York Detroit San Francisco Chicago

BOSCH

BECAUSE of its quality and excellent design the Bosch Magneto is known as the most desirable ignition system. It is built to uphold a reputation, to measure up to a standard and consequently it costs just a little more than other systems—but it is the cheapest by far, in the long run.

It is for you to say what ignition system you shall have!

*Be Satisfied
 Specify Bosch*

American
 Bosch Magneto
 Corporation

Main Office and Works:
 Springfield, Mass.

Branches:
 New York, Chicago, Detroit
 San Francisco

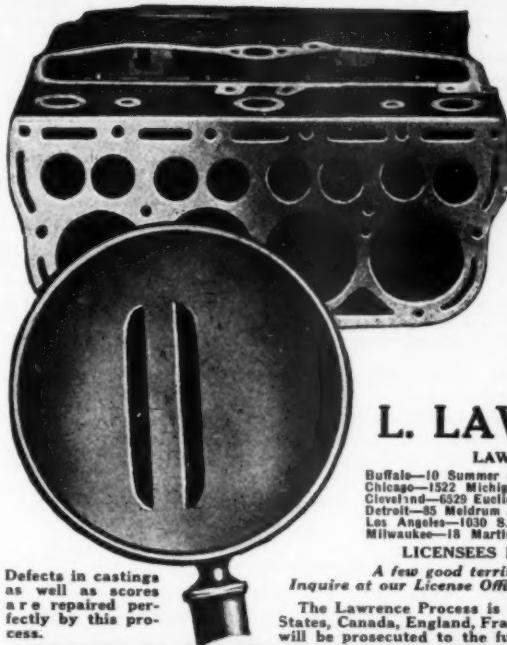


AMERICA'S SUPREME
 MOTOR TRUCKS, TRACTORS, AIRPLANES, MOTOR CYCLES,
 AUTOMOBILES, GAS ENGINES, ETC.



IGNITION SYSTEM

LAWRENCE PATENT PROCESS



Defects in castings as well as scores are repaired perfectly by this process.

SCORED CYLINDERS REPAIRED PERFECTLY

SCORED cylinders can be repaired as good as new at comparatively small cost by the Lawrence Patent Process. New cylinder castings which show slight defects in the bore can be made as perfect as a flawless casting. Cracked water jackets are repaired perfectly and permanently.

Our expert workmen electrically fuse a silver nickel alloy into the defects or scores. The bore of the cylinder is not enlarged; the standard piston and rings fit the same as when new. The compression is restored and our work is *guaranteed for the life of the motor*. Positively cannot warp or harm the cylinders in any way because the cylinder is not heated.

Repairs by the Lawrence Patent Process are quick, inexpensive, uniform and absolutely permanent. Our plants give 24-hour service.

Write us today for quotation on your work, stating size of cylinder and size of score or defect, or if you are in a hurry, ship your cylinders at once to our nearest service branch.

L. LAWRENCE & CO.,

Established 1862 292 HALSEY ST.
NEWARK, N. J.

LAWRENCE SERVICE PLANTS

Buffalo—10 Summer St.	Minneapolis—14 N. 9th St.
Chicago—1522 Michigan Ave.	Newark—292 Halsey St.
Cleveland—6329 Euclid Ave.	New York City—355 W. 57th St.
Detroit—85 Meldrum Ave.	Philadelphia—1601 Summer St.
Los Angeles—116 S. Grand Ave.	Pittsburgh—5102 Baum Blvd.
Milwaukee—18 Martin St.	San Francisco—116 Hyde St.

LICENSEES NEARLY EVERYWHERE

*A few good territories for licensees still open
Inquire at our License Office, Woolworth Building, New York City*

The Lawrence Process is covered by broad patents in the United States, Canada, England, France, Italy and other countries. Infringers will be prosecuted to the full extent of the law.



Let Us Light Your Boat

Whether it's a runabout, cruiser, yacht or commercial boat, we have the ideal lighting and ignition system for you. A proven product of 15 years' actual use by the Motor Boat Trade.

"DAYTON" MOTOR BOAT LIGHTING AND IGNITION SYSTEMS

Made up in combinations of Dynamo, Battery and Switchboard for water craft of every description.

6 - 12 - 32 Volts

4 to 40 Lights

Catalog upon request.

THE A-C ELECTRICAL MFG. CO.
DAYTON OHIO, U. S. A.

SAL

SPEEDOMETER for MOTOR and SAIL YACHTS

IS THE ONLY KNOWN DEVICE FOR DETERMINING THE
EXACT SPEED OF ANY BOAT. ASK FOR INFORMATION

HAMILTON & HANSELL, Inc., 13 Park Row, N. Y. City



P. H. Gill & Sons Forge and
Machine Works, Brooklyn, N. Y.

FINISHED CRANK SHAFTS

We are furnishing them to some
of the leading marine engine
builders. Carbon and Alloy Steel.
Heat Treated to your own specifica-
tions. We grind all Pins and
Bearings. Forged, machined, and
finished complete in our own plant.
Let us quote you.

The Michigan Reversible Propeller Wheel



Don't take up valuable room in your boat with a cumbersome and troublesome reverse gear.

With a Michigan Reversible Propeller on your boat you are free to navigate without danger of collisions and with the same safety as with a reverse gear costing many times more. Besides this you are saved the annoyance of repairs and break-downs so often occurring with a reverse gear.

Michigan Propeller Wheels are designed and constructed for service and results. A propeller for your every need.

Write to-day for information.

MICHIGAN WHEEL COMPANY

C. J. LITSCHER, Pres.
1240 Monroe Ave.

MICHIGAN

We also manufacture Universal Joints,
Couplings, Stern and Thrust Bearings, Ball
Bearings, Power Bilge Pumps.

PALMER

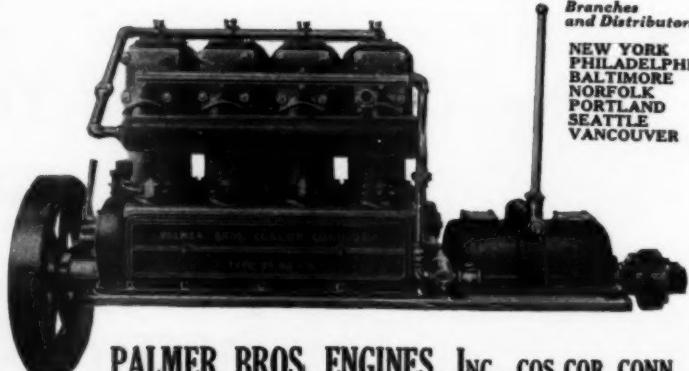
ENGINES

TRADE MARK REG. U.S.PAT. OFF.

FOUR CYCLE TWO CYCLE
3½ H.P. to 80 H.P. 2½ H.P. to 10 H.P.
One to Six Cylinders One and Two Cylinders

Palmer engines have been used extensively
for twenty-five years in both pleasure and
work boats.

Write for Catalogue



Branches
and Distributors
NEW YORK
PHILADELPHIA
BALTIMORE
NORFOLK
PORTLAND
SEATTLE
VANCOUVER

PALMER BROS. ENGINES, INC., COS COB, CONN.

MIANUS

MAINE MOTORS

The New Oil Engine

"Leisner System"

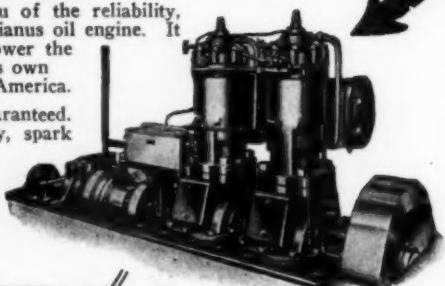
A little investigation will convince you of the reliability,
economy and thorough success of this Mianus oil engine. It
convinced W. W. Nutting who selected our 7½ H.P. oil engine to power the
45 ft. Typhoon for a trip across the Atlantic. In addition to Mr. Nutting's own
broad experience, he had the advice of some of the best boat experts in America.

Consider the economy of fuel oil,—less than 6/10 pints per h.p. hour guaranteed.
Consider the simplicity of ignition by compression—no magneto, battery, spark
plug, timer, wiring, hot plates or tubes. Perfect operation at all speeds,
with or without load.

Write today for Bulletin "O"

THE MIANUS MOTOR WORKS : : : Stamford, Conn., U.S.A.

New York, Norfolk, Va.; Portland, Me.; St. John, N. B.; Boston, Baltimore, Md.; East Port, Me.



Perfect Control of Spark and Throttle

Spark and Throttle Controls are instantly sensitive to the slightest change. When you shift the levers, they stay put; the notches guard against accidental change.

You can place the *WC* Control vertically or horizontally in the most convenient place. A single machine screw adjusts it on its base plate so that it can be attached to surfaces not exactly parallel to the direction in which the rods are to lead. Control, Base Plate and Control Cranks furnished complete.

Most dealers carry *WC* Dependable Marine Hardware. If yours doesn't, ask us for the name of a dealer who does.

Get This Book Now

"*Sea Craft Suggestions and Supplies.*" Illustrates and explains uses of complete *WC* Line for power boats and other small craft. Tells how to box the Compass, what is proper Ground Tackle; gives hints on Steering Gear, Shaft Bearing, etc. A valuable 287-page book. Sent only on receipt of 50c.

Wilcox, Crittenden & Co., Inc.
4 South Main St., Middletown, Conn.
Established 1847

This is our Trade Mark and Your Protection.
Note it carefully.

Trade Mark Reg.

BUILT BY
LUDERS
THE LAST WORD
IN YACHT DESIGNING & BUILDING

—FOR EARLY DELIVERY—
60 FOOT TWIN SCREW CRUISER NOW BUILDING
LUDERS MARINE CONSTRUCTION COMPANY,
50 MINUTES FROM
GRAND CENTRAL
STATION.

STAMFORD,
CONN.

Hit 'Em-Head On

THE fact that a craft is powered by a Wisconsin Motor dispels all anxiety and fear of disaster in the most treacherous storm. Touch the throttle—"feel" the instant response—and meet the waves *head on!* That built-in dependability so evident in every Wisconsin Motor makes it slightly higher in price, but priceless when safety is sought.

Every Wisconsin Motor is run-in, torn down, and rigidly inspected before it is re-assembled.

Write for Specifications.

WISCONSIN MOTOR MFG. CO.
Station A, Dept. 302 Milwaukee, Wis.
DISTRIBUTORS:
New York Branch: T. M. Fenner, Factory Representative, 21 Park Row, New York, N. Y.
California Distributor: Earl P. Cooper Co., Los Angeles, Cal.
Northwest Distributor: Chandler-Dunlap Co., Seattle, Wash.

TIEBOUT'S
LOCKS AND LATCHES FOR DOORS AND HATCHES

MARINE HARDWARE

Delivered when you need it. Dependable delivery is one of the many reasons why the House of Tiebout has become the regular port of call for so many users of Marine Hardware. We carry in stock a complete assortment of Marine Hardware to meet every need.

No order too small—
No order too large—
Every order properly and promptly filled at prices that are right.

W. & J. TIEBOUT
118 Chambers St., New York City

POWELL
"ADJUSTO"
GENERATOR-VALVE

Made in sizes $\frac{3}{8}$ to 2" inclusive.

Write for "Adjusto" Circular.

WE MANUFACTURE
Gasoline Cocks—Strainers—Priming Cups
Oil Cups—Grease Cups—Lubricators

The Wm. Powell Co.
CINCINNATI, OHIO

REGAL
—FOUR CYCLE—
MARINE ENGINES

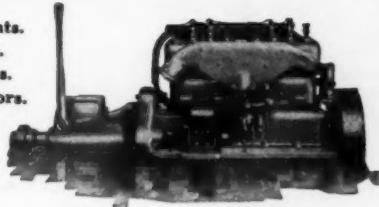
FOR nineteen years have led the field in the design and construction of reliable and economical power plants. Sizes 2 h.p. to 50 h.p. One to four cylinder. Built to operate with gasoline distillate or kerosene.

REGALITE—the new Electric Lighting Plant, 2 h.p. air cooled motor, $\frac{1}{4}$ k.w. generator. Write for information.

REGAL GASOLINE ENGINE CO.
74 West Pearl Street COLDWATER, MICH.

G.H. MASTEN CO., Inc.

Eastern and Export Agents.
Vulcan Marine Engines.
Caille Perfection Motors.
Wisconsin Outboard Motors.



Manufacturers of Motor Boat Tops, Spray Hoods,
Life Rafts, Life Preserver Cushions, etc.

Write for Catalogue Today.

OBEY THE LAW!

Masten Reversible
Life Preservers
make this possible.
They have Gov't
approval and carry
our guarantee of
satisfaction or
your money back.

Masten Life Preservers
for all purposes
are of Masten
standard and
most economical in
price.



Motor Boats, Motors, Marine Accessories and Supplies

Swim with the "Liberty" Swimming Belt

Learn to swim in half an hour. Just make the strokes,—the "Liberty" will hold you up. They make a beginner a swimmer — a swimmer an expert.

YOUR DEALER CARRIES MASTEN EQUIPMENT.

Your
Dealer
will
Supply
You.
\$2.00
by
Mail.



G. H. MASTEN COMPANY, Inc., New York City
Display Showroom, 38 East 9th Street, $\frac{1}{2}$ block West of Wanamaker's



BOYCE MOTO-METER

Engine efficiency depends on the temperature—a cold engine is wasting fuel. Overheating means trouble. The Boyce Moto-meter registers every change from 32° to 212° F. Price \$18.00 complete with 5 ft. of tubing ready to install.

Let us send you a free copy of "Marine Efficiency" by Gerald Taylor White.

The Moto-Meter Company, Inc.
Long Island City,
New York





Boating Enthusiasm

is greater and more widespread than ever before.

The Power Boat races at Burlington, Iowa, are attracting a record breaking crowd and the interest is unprecedented.

Get in line by fitting out your boat with the best and most up to date

Marine Hardware and Equipment

Our new catalogue tells you how—a complete boat owner's guide. SEND FOR IT. It is free to you.

GEO·B·CARPENTER & Co.

MARINE SUPPLIES

200 W. Austin Ave.

Chicago, Ill.



POINTS TRUE!

As your compass guides you safely to port, so the mark  guides you to Dependable Motor Boat Fittings. The

Oil Compass

is constructed on scientific principles by skillful workmen. Its action, accuracy and steadiness are guaranteed under all conditions. Built to withstand the jars of power craft, the dial is adjusted to remain steady in a sea way and responds quickly to a change in direction. Every Compass carefully tested before shipping. 2, 2½, 3, 4 and 5 inch dials. At your dealer's or write us.

Send 20c in stamps for celluloid Course Protractor, "Compass Talks and Tests" sent free. Tells how to box the compass, contains deviation tables, and other practical information for compass users.

WILCOX, CRITTENDEN & CO., Inc.
4 South Main Street Middletown, Conn.



Put the Power of Niagara in Your Boat



NIAGARA Motors have been on the market continuously for the past 14 years. They have established a reputation for reliability, durability, economy, and quality in materials and workmanship.

Write for Information

**NIAGARA MOTORS CORPORATION
206 NIAGARA BLVD., DUNKIRK, N. Y.**

Contractors to the United States Government

The Porr Loichot Engine Corporation, 380 Canal Street, General Distributors.

GRAY-ALDRICH COMPANY, Inc.
84 Atlantic Avenue Boston, Mass.

Rebuilt Engines

252	24 H.P.	Fairbanks - Morse Type "G"	
255	36 H.P.	2 cyc. 4 cyl.....	\$375.00
259	24 H.P.	Lathrop, 3 cyl. 2 cyc. and reverse gear	800.00
261	24 H.P.	Lathrop, 2 cyc. 2 cyl., regular equipment and coupling....	425.00
262	12 H.P.	Lathrop, 2 cyl. 2 cyc., regular equipment	350.00
266	6 H.P.	Fairbanks - Morse Type "T"	
271	9 H.P.	Special Electric Stationary Kerosene	450.00
272	6 H.P.	Brown Stationary	125.00
274	32 H.P.	Fairbanks - Morse Type "T" Special Electric Vertical Stationary Kerosene	425.00
275	80 H.P.	150.00	
277	16 H.P.	Lathrop, Standard Model...	285.00
286	5 H.P.	Wolverine, 3 cyl. 4 cyc. and reverse gear	175.00
287	24 H.P.	Wolverine, 3 cyl. 4 cyc. propeller and reverse gear....	2500.00
288	16 H.P.	Lathrop, 2 cyl. 2 cyc. jump spark and reverse gear....	425.00
290	36 H.P.	Lathrop, 3 cyl. 2 cyc. jump spark and reverse gear....	735.00
291	4 H.P.	Lathrop, 1 cyl. 2 cyc....	85.00
292	5 H.P.	Lathrop, 1 cyl. 2 cyc. (not overhauled), as is	30.00
293	20 H.P.	Lathrop, 2 cyl. 2 cyc. with coupling	350.00

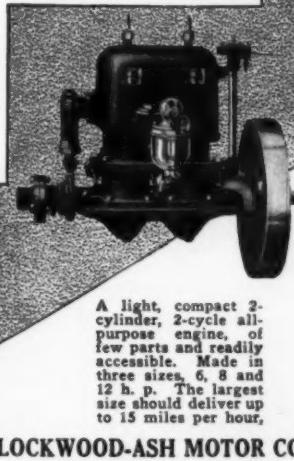
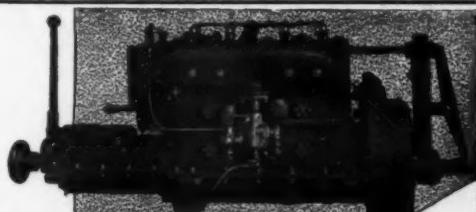
One of These Will Meet Your Needs

Somewhere in the line of Lockwood-Ash Marine Engines is one that will meet your needs.

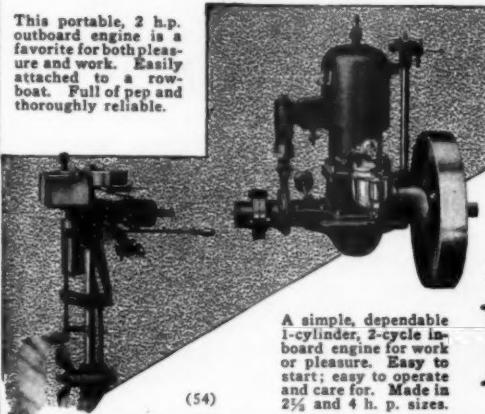
From the clean-cut, sturdy 2 h.p. outboard engine to the big four-cylinder power plant are varieties in size to cover a wide range of power and speed requirements.

This portable, 2 h.p. outboard engine is a favorite for both pleasure and work. Easily attached to a rowboat. Full of pep and thoroughly reliable.

Big brother of the Lockwood-Ash Engine family, a highly developed 4-cylinder, 4-cycle marine power plant. Rugged and dependable. Delivers up to 20 h.p. Built with or without rear starter.



A light, compact 2-cylinder, 2-cycle all-purpose engine, of few parts and readily accessible. Made in three sizes, 6, 8 and 12 h.p. The largest size should deliver up to 15 miles per hour.



(54)

A simple, dependable 1-cylinder, 2-cycle in-board engine for work or pleasure. Easy to start; easy to operate and care for. Made in 2½ and 4 h.p. sizes.

Why Lockwood-Ash Engines are Worthy of Your Choice

Lockwood-Ash Marine Engines are products of an institution which always has placed quality first. Experience has pointed out the sizes that make up the well-selected line, and the quality standard has dictated the thorough workmanship which is in every Lockwood-Ash Engine. Ask for the booklet that tells all about Lockwood-Ash Engines. Also ask about the 30-day trial plan.

LOCKWOOD-ASH MOTOR CO., 2007 Jackson St., Jackson, Mich.

LOCKWOOD-ASH

MARINE  ENGINES

MULLINS STEEL BOATS CAN'T SINK



Think of it! No anxiety to disturb your summer day's pleasure on the water. You *know* you're safe. Sinking is impossible. Mullins steel boats, like lifeboats, are built with air compartments fore and aft. The steel puncture-proof hull can't waterlog—the boat is always buoyant. No warping, checking, leaking or opening at the seams. You need never call a Mullins. Weather-proof, too—a Mullins dispenses with a boat house.

Mullins power boats are built in the world's largest boat factory and are designed by America's foremost naval architects. They are equipped with the best engines obtainable. Patented, silent under-water exhaust makes them the quietest boats afloat.

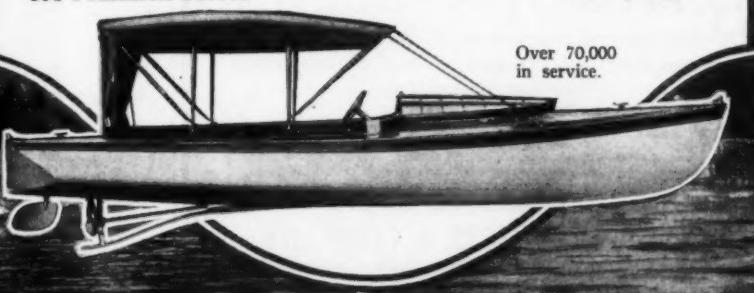
Write for catalog of over 40 models of steel and wooden power boats, rowboats and canoes.

THE MULLINS BODY CORPORATION

Boat Department

601 Franklin Street

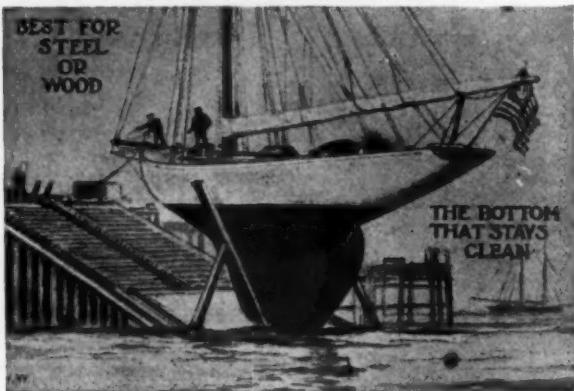
Salem, Ohio



Over 70,000 in service.

MARBLEHEAD GREEN

ANTI-FOULING BOTTOM PAINT



READY FOR THE WHOLE SEASON

That's economy—no hauling out for repainting. Covers twice the surface—halves the first cost. Gives a wonderful slippery polish, adding speed.

The Only Paint for Southern Waters.

Write to us for new circular and special pointers.



JASCO
SAFETY FIRST
TANK

"JASCO"
SAFETY FIRST
TANKS

SUPPOSE IT IS INSURED!

An insurance policy may cover the *cost* of your boat but it won't protect the life of its occupants. With a "Jasco" equipped boat there *simply can't* be such a thing as a leak in your gasoline tank.

"Jasco" Tanks mean safety with a saving.

Made of seamless drawn steel, strong and tested—they are perfect in every detail and insure lasting service and positive protection.

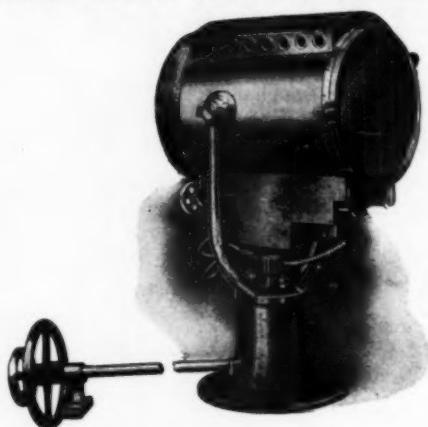
THERE'S A "JASCO" TANK FOR YOUR BOAT.

Send for booklet and detailed information

JANNEY, STEINMETZ & COMPANY

Main Office, Philadelphia New York Office, Hudson Terminal Bldg.

CARLISLE & FINCH ELECTRIC SEARCHLIGHTS



have for years been the choice of careful motor boat and ship owners. Made in all diameters, from 7" to 60". Used on every size craft from motor boat and yacht to battleship and ocean liner.

The Carlisle & Finch catalog of searchlights will be mailed to any boat owner, builder and marine architect on request

THE CARLISLE & FINCH COMPANY
261 East Clifton Ave. Cincinnati, Ohio

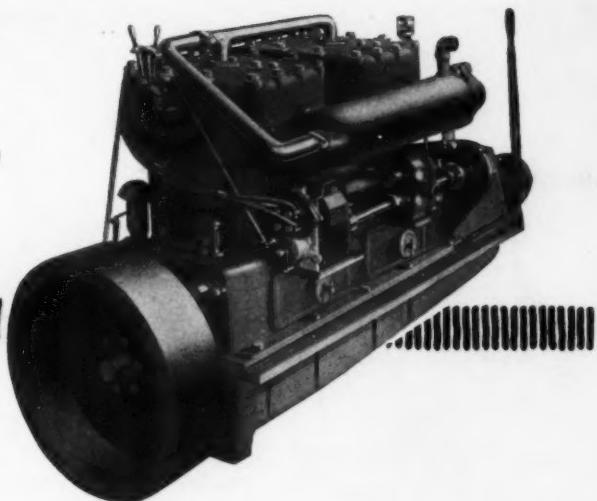
CUT RATE MARINE SUPPLY HOUSE

Everything for Motor Boats



Catalogue Mailed Free

E. J. WILLIS CO. 85 Chambers St. New York City



Giant Power At Pigmy Cost

You get all the power you want, at the lowest possible cost for fuel and maintenance, when your boat is Doman-powered.

Doman durability is assured by over-size water jackets, great bronze-backed bearings, giant valves and leak-proof oiling system.

Write for Specifications

THE H. C. DOMAN CO.

Station 812, Oshkosh, Wis.

DOMAN
OSHKOSH, WIS.

DOES YOUR BOAT LEAK?

Send for our Booklets "How to Make Your Boat Leakproof" and "Marine Glue—What to Use and How to Use It"

Any old boat, so long as the frames are in fair condition, can be made water-tight by following the instructions in the above booklets. This applies to anything that floats from a canoe to a yacht—wood or steel.

Put your leak troubles up to us and we will help you to stop them. For more than 75 years Jeffery's Marine Glue has been the choice of the foremost boat builders of the world.

Jeffery's is a product that has not varied from the strict line of quality—it is not a competitive commodity made to meet a price.



JEFFERY'S WATER-PROOF MARINE GLUE IN ALL THE VARIOUS GRADES

For sale by all Yacht, Boat and Canoe Supply Houses;
Hardware, Paint and Oil and Sporting Goods Dealers.

L. W. FERDINAND & CO.

152 Kneeland St.

Boston, Mass.

In Hongkong Harbor

In far Eastern ports, darting among ocean liners and native junks, many small boats, powered by Evinrude Motors, ply their way between shore and ship—while on the inland lakes and streams of America, thousands of sport-lovers are enjoying hunting, fishing and pleasure trips without the tedious work of rowing—Evinruding!

An Evinrude is attached quickly and easily to any rowboat or canoe. Magneto, built-in-flywheel type, and Automatic Reverse are standard Evinrude refinements.

Ask your sporting goods or hardware dealer. Or write for catalog.

EVINRUDE MOTOR CO.,
303 Evinrude Bldg., Milwaukee, Wis.

DISTRIBUTORS:
69 Cortlandt St., New York, N. Y.
214 State Street, Boston, Mass.
440 Market Street, San Francisco, Cal.
211 Morrison St., Portland, Ore.

EVINRUDE
DETACHABLE MOTOR FOR WATERCRAFT

My Catalog Will Prove Interesting to All Who Like Motor Boats. Send Stamp for 1920 Issue of

HAND-V-BOTTOM MOTOR BOAT DESIGNS

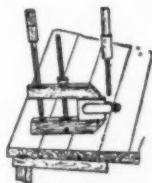


WILLIAM H. HAND, Jr. - Naval Architect - New Bedford, Mass.



EMALCO

MARINE HARDWARE



Emalco Universal Clamp



Maxim Silencer

Anchors
Batteries
Bearings
Bells
Bilge Bailers
Binnacle Lamps
Blocks
Boat Hooks
Boat Scrapers
Bolts
Calking Irons
Carburetors
Chain
Clamps
Clocks
Code Signals
Coils
Compasses
Cushions

Electric Lights
Fenders
Flags
Fog Horns
Gauges
Hooks
Horns
Lamps
Lighting Outfits
Locks
Magnetos
Mufflers
Nails
Nuts

Padlocks
Paint Brushes
Paint
Piston Rings
Polish
Port Lights
Propellers
Pulleys
Pumps
Rope
Screws
Sea Cocks
Seam
Composition
Search Lights
Shackles
Shafting
Signals

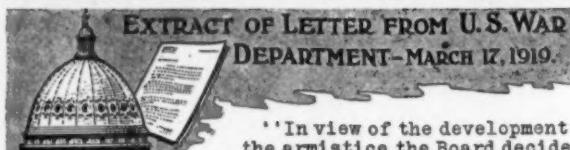
Socket Wrenches
Spark Plugs
Speed Indicators
Sponges
Steering Wheels
Stoves
Strainers
Switches
Tanks
Tiller Rope
Torches
Varnish
Washers
Wheel Pullers
Whistles
Windlasses
Wrenches

and everything else for your boat.

Write today for EMALCO Catalog if you want the best hardware at the most reasonable price. Export orders promptly attended to.

MALONE HARDWARE COMPANY
"WHERE THAT DOLLAR STRETCHES"

378 Atlantic Ave. Near Rowe's Wharf BOSTON, MASS.



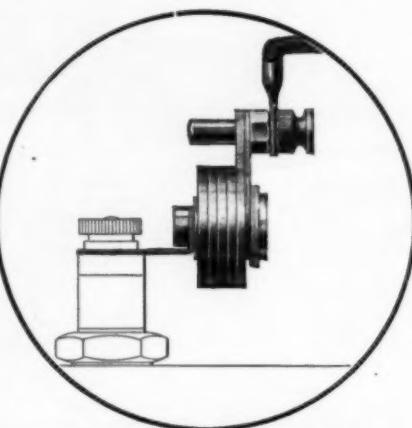
FRANCE AND AMERICA ENDORSE

Sparko-Gap

When perfect ignition meant trained men's lives, the French Government adopted Sparko-Gap for all airplane motors.

For quick, sure, 100% ignition — a hot, fat spark that never fails — up to 35% saving in gas, with more "pep" and more power — for never failing, uninterrupted explosions, they made it standard equipment on all airplanes.

Professor A. Press, Professor of Electrical Engineering of Berkeley, California, watched Sparko-Gap working on U. S. subchasers, on Liberty airplane engines, Liberty truck engines, and popular commercial motors in Government laboratories at Washington. He states that "the Sparko-Gap will fire plugs in condition two hundred and fifty times as difficult as will an ordinary ignition system without them; so that plugs will fire no matter how dirty they are, and even with broken porcelains."



Reason for Sparko-Gap

Oil and gasoline, under compression, form a serious obstacle to the passing of current across the spark-plug points. For successful ignition a quick, high-powered spark is required. The U. S. Government, after many tests, stated that this quick, high-powered spark could be obtained only by the condensing action obtaining in the Sparko-Gap.

What the Sparko-Gap Will Do for Your Car
Increase power up to 37% by U. S. test.
Make motor more flexible.
Increase hill-climbing power.
Prevent Carbon trouble in engine.
Save up to 35% in gas by U. S. test.

PRICE \$1.50 EACH

Guaranteed for life of car. Fits all spark plugs. No attachments or motor adjustments. Money back any time if dissatisfied.

Write or wire for DEALER PROPOSITION

Patented in All Important Countries

SPARKO-GAP COMPANY

Dept. M-C, 54 West 39th St.

New York

SPARKO-GAP CO., Dept. M-C, 54 West 39th St., New York City.

Enclosed please find \$..... for a set of Sparko-Gaps at \$1.50 each.

Name.....

Street.....

City..... State.....

A set consists of one for each cylinder.

Specifications for 40-foot Express Cruiser Eclipse

(Continued from page 31)

Oil Tank: There will be a cylinder oil tank properly set and connected. Same will have outlet piped to motor with $\frac{3}{4}$ -inch brass pipe and necessary controlling valves. To be arranged to fill from deck. Tank to be located on starboard side of engine compartment. Dimensions, 12x24 inches.

Toilet-Room Plumbing: In toilet room there will be a folding lavatory properly connected for service. There will be a water closet where shown, properly connected with discharge and supply sea cocks. There will be a suitable nickel-plated towel rod, glass holder and paper box as required, also an approved mirror on bulkhead over lavatory.

Galley Sink: There will be an enameled iron sink 12x16 inches in galley, where indicated, properly installed with suitable drain overboard.

Galley Pump: There will be an all-brass galley pump properly installed and connected with fresh-water tank.

Electric Lights

The motor equipment will include one electric storage battery. The builder will supply and properly fit and connect with batteries, which will be installed in motor compartment, as will be directed (with properly concealed wiring), the following brass electric light fixtures. In forward cabin, four lights of suitable pattern; in toilet, one light; in galley, two lights; in motor room, two lights and one exploring light with 10-foot cord and sockets. The builder will also supply a complete set of extra lamp bulbs, a set of electric running lights of size required by United States laws, together with the necessary plug wires and plugs to fit sockets, ready for use. Note: The bow light and side lights will be built up of mahogany light boards and fresnel glass.

Painting

Above indicated painted waterline, the topsides, including guards, are to be finished in required number of coats of the best white lead paint to give a satisfactory finish. Below waterline, the hull is to be finished with two coats of approved green non-fouling bottom paint, over one coat of red lead. There will be a dark green boot-top stripe, $\frac{1}{2}$ inches wide, between top and bottom paints, as indicated by the plan. Canvas deck covering to be painted with three coats of deck paint, DeVoe's D tan or equal. The name and port to be put on stern in 3-inch plain block gold-leaf letters. All parts of hull, where not exposed to view, to be painted with two coats of red lead and oil. Exposed surfaces to be finished properly as hereinbefore mentioned. Other exposed parts of hull, including trimmings, bridge seats, rails, hatches, decks and companionway, to be finished bright with one coat of wood filler and three coats of the best marine spar varnish, properly applied in the usual manner. All interior mahogany to have "egg-shell" finished varnish properly applied. Rail stanchions will be enameled a neat approved color, and all flooring to be finished in varnish.

Miscellaneous

Deck Chocks: The builder will supply and properly fit the necessary mahogany chocks on forward deck to properly hold service anchor.

Boarding Steps: There will be a pair of regulation mahogany boarding steps, with necessary metal work of brass, to engage sockets on both starboard and port sides, as required. The treads will be covered with corrugated rubber, nosings will be of rubber. There will be the usual white canvas back trim, as required.

Bilge Pump: There will be an approved hand bilge pump, properly fitted as required, to pump all compartments.

Equipment

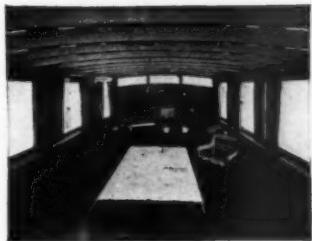
The builder will supply and fit the following items of equipment:

- 2 Transom cushions for forward cabin with approved Fabrikoid coverings, or equal, and filled with best silk floss.
- 2 Silk floss filled tan Fabrikoid, or equal, covered cushion for bridge seats, and one cockpit seat cushion to match.
- 1 Pyrene fire extinguisher and bracket.
- 1 Tachometer complete, as manufactured by Nelson Instrument Co., of Boston, Mass., or equal.
- 1 Brass fog bell.
- 1 5-inch spirit compass mounted in brass skylight binnacle.
- 1 Brass electric Klaxon.
- 1 Brass mounted boat hook.
- 4 Cylindrical cork fenders, 4 inches diameter.
- 6 Jacket life preservers.
- 1 Each, covers for steerer, binnacle, Klaxon, skylight, and cowl ventilator.
- 1 Each, deck swab, deck bucket, scrub brush, fog horn, and broom.
- 1 35-pound galvanized kedge anchor.
- 1 65-pound galvanized kedge anchor.

(Continued on page 88)

You have pictured to yourself the pleasures of boating—

Make these pleasures *real* and *permanent* by the selection of an ALBANY Boat.



Dining Saloon portion of glass-enclosed Bridge Deck looking aft toward companionway to Owner's Stateroom.



Forward half of Owner's Cabin looking toward toilet and glass-enclosed Bridge Deck. Pullman berths are in the paneling.



Guest Cabin looking forward. A dresser is now built in against lower half of full length mirror shown here.

There are very definite reasons why an Albany 50-foot Cruiser insures continued comfort and enjoyment.

The arrangement of space affords more room—more conveniences—more privacy—than is usual on a craft of this length.

The glass-enclosed Bridge Deck and Dining Saloon is the center from which shipboard activities radiate. In sunshine or in rain—in pleasant or in stormy weather, it is a most delightful place.

All cabins are accessible from the glass-enclosed bridge deck—a comfort convenience especially appreciated in stormy weather.

The Owner's Cabin is aft. It is really a double cabin having two transom berths and two Pullman berths. This cabin may be divided by curtains into two cabins when desired. It is roomy, light and airy—comfortable in use and attractive in appearance.

The Guest Cabin forward accommodates four people. Though not so large as the Owner's Cabin it is light, well ventilated and comfortable.

The Galley is equal to real living requirements. It has a three-hole range with oven, a big refrigerator, and plenty of stowage for provisions.

Crew's quarters are in fo'c'sle forward. This provision for their comfort helps to make a contented crew, so necessary for the continued enjoyment of your cruise.

The Twin 6-cylinder engines make better than 20 m.p.h. Special construction and arrangement for safety are such that 40% lower insurance rates have been granted on this Cruiser.

The general appearance of the boat is trim and snappy—one may be proud of an Albany among any craft afloat.

The same model is built with yacht stern in 57-foot length overall.

This Cruiser has some little sisters, 40- and 42-foot Express Cruisers; 26-, 30- and 35-foot Runabouts. Mention the size of boat that interests you and further details will be forwarded.

Albany Boat Corporation

Seventh Street

Watervliet

New York



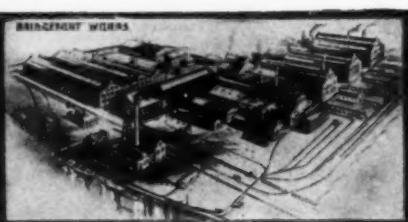


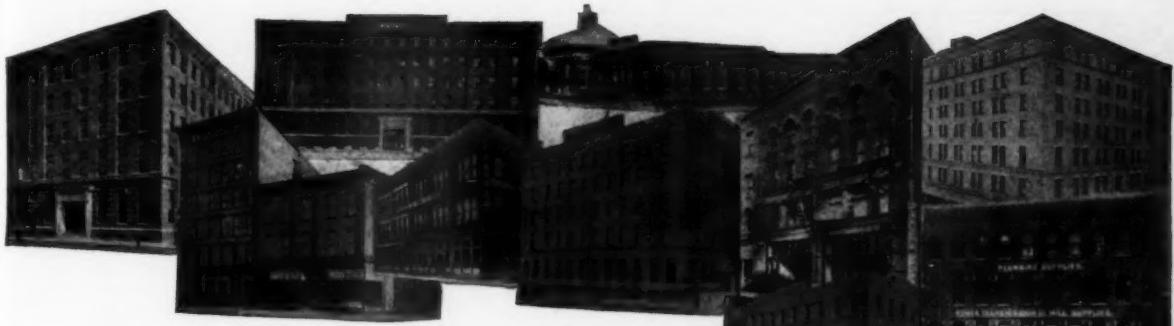
1855 — CRANE
MANUFACTURERS OF
Valves
Pipe Fittings
Steam Specialties

SALES OFFICES, WAREHOUSES AND SHOWROOMS

BOSTON	BALTIMORE	MUSKOGEE
NEWFIELD	WILMINGTON	TULSA
BRIDGEPORT	SYRACUSE	OKLAHOMA CITY
ROCHESTER	BUFFALO	WICHITA
NEW YORK	BALTIMORE	ST. LOUIS
ALBANY	ATLANTA	KANSAS CITY
BROOKLYN	KNOXVILLE	TERRE HAUTE
PHILADELPHIA	BIRMINGHAM	CINCINNATI
NEWARK	BIRMINGHAM	INDIANAPOLIS
CAMDEN	LITTLE ROCK	

CRANE LIMITED MONTREAL, TORONTO, VANCOUVER, WINNIPEG, LONDON, ENGLAND,
 SYDNEY, N. S. W., QUEBEC, HALIFAX, OTTAWA, CALGARY.





Anniversary!

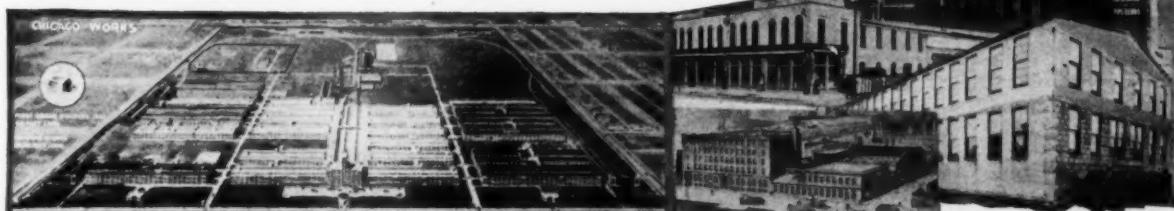
These houses made
better service
possible

CO. — 1920

DISTRIBUTORS OF
Pipe
Heating and
Plumbing Materials

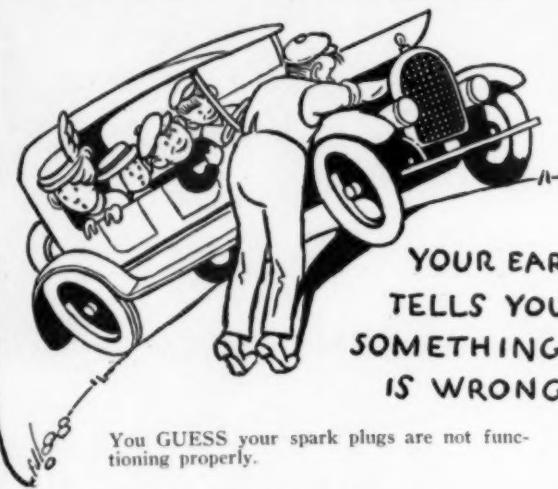
WORKS: CHICAGO AND BRIDGEPORT
DETROIT CINCINNATI MINNEAPOLIS TACOMA
ROCKFORD OSHKOSH FARGO BISMARCK POCATELLO
GRINDLIPS DAVENPORT WATERTOWN ABERDEEN SALT LAKE CITY
DAVENPORT DES MOINES GREAT FALLS SACRAMENTO OGDEN
OMAHA SIOUX CITY BILLINGS DALLAS SAN FRANCISCO
SIOUX CITY SPOKANE SEATTLE LOS ANGELES

CRANE EXPORT CORPORATION
NEW YORK, SAN FRANCISCO, PARIS



When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating

TAKE THE GUESS OUT OF YOUR SPARK PLUG TROUBLES

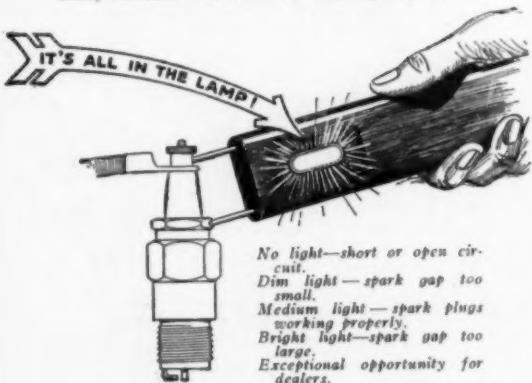


You GUESS your spark plugs are not functioning properly.

FLASH-O-LIGHT TESTER FOR SPARK PLUGS

Shows you, in a flash, just where the trouble lies.

Indispensable for owners of automobiles, tractors, motor boats, aeroplanes and gasoline engines. A necessity for repair men. Absolutely durable—cannot burn or wear out—saves time, reduces maintenance and upkeep costs.



ORDER ONE FROM YOUR DEALER TODAY
or mail the following coupon:

Flash-O-Light Corp., Dept B-1,
507 Fifth Ave., New York.
Enclosed find \$3.00 for one Flash-O-Light Spark Plug Tester.

Name _____

Address _____

Specifications for 40-foot Express Cruiser Eclipse

(Continued from page 84)

- 2 Suitable manila cables, about 35 fathoms long each.
- 4 Dock lines, each 8 fathoms, 21-thread manila.
- 1 Set of motor tools as supplied by motor manufacturers.
- 2 Copies of U. S. Pilot Rules.
- 2 Copper squirt cans for oil.

In General

Before the boat is delivered, the bilges, all pockets, closets, and compartments must be cleaned and freed from all dirt, shavings, saw-dust, etc. It is to be clearly understood that the boat is to be delivered complete in all ways, ready for use, with all machinery, lights, pumps and other details properly adjusted and in satisfactory working order.

A Real Quiet Exhaust

(Continued from page 34)

maximum of 446 r.p.m., a net loss of six revolutions, for which the reverse gear was probably partially responsible, and even though we charge the gear with only a third of the loss we will have but four revolutions loss to charge up to the exhaust system.

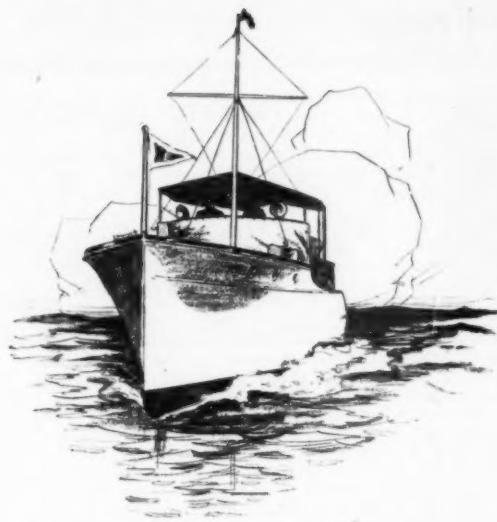
The exhaust left the cylinders through a 2-inch galvanized pipe terminating in a 45-degree ell. Into this was tapped and inserted a half-inch pipe carrying part of the overflow water from the cylinders, the quantity being regulated by a valve in the half-inch line. From this ell the piping pitched downward to another 45-degree ell and close nipple, entering a hollow cast iron cylinder 10 inches long and about four and one-half inches in diameter. This cylinder was located under the self-bailing cockpit floor and was nothing more or less than a common cast iron muffler with the perforated nozzle on the end nearest the engine eliminated. From the after end of this cylinder ran aft on the same level to a 45-degree ell, then a short piece of pipe raised the line to another 45 and short nipple entering the forward end, near the top, of a cylindrical riveted galvanized expansion tank.

This tank is 16 inches long and 8 inches in diameter, and in the under side of the shell in the center of the length is riveted a flange, tapped for 2-inch pipe. A close nipple enters this opening and connects it to half of a brass union, the other half of it being made onto the threaded portion of the underwater exhaust scoop. Of course, for safety, a lock-nut is placed on this fitting before the half of the union. Another brass union is placed just ahead of the ell and close nipple entering the forward end of the expansion tank. This permits the removal of the expansion tank without disturbing the rest of the piping, and as there is a flange coupling close to the engine as well as a union in the $\frac{1}{2}$ -inch line, the piping may be removed without disturbing the expansion tank. It may seem extravagant to use the brass unions as called for, but if you should have to take out the tank or the piping, you will find that it is the only union that will come apart after salt water, heat and exhaust gas get in their work. I have used those half-brass and half-galvanized unions, and had to cut them off when it came to removing the piping, and then I "came across" for the brass ones.

With the two-cycle Lathrop this system gave me no trouble whatever, but since then I traded off the faithful old machine for a 12-15 h.p. Model "D" Sterling (four-cycle, $5\frac{1}{2}$ -inch bore, 7-inch stroke). On rare occasions, with this machine when it was stopped and came to rest with the exhaust valve open, a partial vacuum would be formed and some water would be drawn into that cylinder—not a desirable condition. The cure is most simple. The bottom of the cast iron cylinder had a $\frac{1}{2}$ -inch tap (previously plugged) into which I inserted a pipe and valve leading to a spot where it can be quickly and conveniently reached. Opening this valve when stopping prevents the water being drawn into the cylinder. Another way out is to open the cylinder priming cups or pet cocks.

The underwater exhaust scoop is only about three inches below the water line when at rest and the second paragraph tells just about how much "back pressure" I encountered. Now all you can hear of the exhaust is a bubbling sound, audible only when standing on the after deck.

E. D. H., Pawtucket, R. I.



COUNT THE COST!

Money saved by using cheap, inferior oils for lubrication is soon eaten up by the cost of repairs because of burnt-out bearings, scorched cylinders, carbon, etc., due to imperfect lubrication. To say nothing of the time lost during these repairs. Most owners learn, sooner or later, that MONOGRAM lubrication is true economy. Use MONOGRAM OIL for the efficient lubrication of your boat.



The Makers of Monogram
NEW YORK LUBRICATING OIL CO
NEW YORK

Sea Sledding in France

(Continued from page 13)

While I was looking admiringly at the barge she suddenly passed from my view, as, with a jerk which threw me down on my beam ends, the fellow called Squeak opened up the motor throttles and we jumped away from the dock out into the river current and around the stern of a freighter loaded with explosives, then Rummy and Stubb gave a swish to the wheel and we skidded three hundred yards toward Blaye. And then I got the idea of the sea sled, what it was good for; I also realized what an ass I would have been to have insisted on using the Captain's barge.

Your honest-to-goodness sea sled is a big square-ended mahogany affair with two whaling big motors, a big cockpit with upholstered seats, high washboards, and a lot of fuel tanks stowed under an overhanging deck. A keel is not found anywhere around this type of boat, instead there is a large inverted U-shaped tunnel underneath, and there is no dashing of the spray aside, for spray, and all that romantic clutter which is cleaved by the gleaming prow of the swift racer of the story book, is here sucked into the tunnel, passed aft to the propellers, and thrown ten feet into the air behind the boat as she sticks four inches of her bulk and flatness into the river and scoots for Blaye.

"Some craft for a swift rescue when a seaplane crashes, I'll say, and there ain't no boat I ever saw could come alongside when you don't want it to," remarked the grammatical Snyder; and he was right! It was blowing hard down stream and a ten-knot tide was running out to sea, yet we flew along like a bolt shot from a gun. We passed vessels like a streak, no matter how they were propelled or what direction they were going. And the old Gironde boasted a large fleet that Sunday, too. Freighters were everywhere, some at anchor, some underway, some bound out, some bound in, and a good number were tied to the docks at Pauillac. There were also a few French fishing boats ploughing along down stream, and a few odd-looking coasting schooners.

All kinds of allied flags were in evidence; French, Cuban, English, American, Greek, Italian, Norwegian and Argentine. I was surprised to see the Cuban flag, but there were two on the river that Sunday. All of the steamers were camouflaged with freakish and apparently foolish designs and colors, they looked as if they had been tied up to a dock near a paint works which had been blown up and they had caught the paint on the downward trip; however, camouflage and many another strange freak served its purpose in the scientific conduct of the great war, the sea sled being an example, too.

The sea sled, with her bow bouncing off the water and her wake thrown all over the river by the wind, hypered in and out among the freighter fleet, but all the time pointed Blaye-ward. We pulled our caps down over our eyes and held on; talking was reduced to a minimum, besides being too interested in the novel experience, we found the wind stiff.

In less time than it takes to tell it we found ourselves rushing by the old town of Pauillac, which lies a mile or two up river from the Air Station. The old dock from which Lafayette embarked for America is a treasured possession of the Pauillac water-front; but we could barely see it as we darted by—there was no time to stop and make an International bow or salute; we would have been saluting the meadows above the town by the time we stood up and got our sea legs under us. The whole town, however, was out gawking at us as we whizzed up river; but two or three waves of the hand to the people along the shore and to those lining the rails of the ships we passed, and—we were at Blaye! Fifteen minutes to make ten miles against a thirty-mile head wind and a ten-knot head rush of tide! It was the fastest boat ride which I had ever experienced, except in a seaplane, sometimes called a boat, or flying boat.

We swept in alongside an old and dilapidated river barge tied up to a very much neglected dock, and there we made fast. The dock was crowded by a pop-eyed throng who had been watching our spectacular arrival; the whole town was out, it seemed; people of all ages, both sexes, representing all the trades and professions in that part of France, and all very much agog at the strange type of craft which had just skimmed up to their town bringing the "Très riches Américains."

The tide being well on the ebb, we had to shin up fifteen feet of rope to get up to the dock head and gain the street, which we did with the usual nonchalance of Naval Officers, and, grinding our trusty "Camels" between our teeth we strode off up town.

Running along ahead of us, to be sure, were the shop keepers and cafe "propriétaires" who hustled open their shops and restaurants and then stood smiling and bowing as we came along the street, all hoping to get the custom of the American millionaires(?) who, of course, were loaded with "beaucoup d'argent". To tell the truth, we had between us, in all, about

fifty francs or approximately nine dollars; and we hoped to get a steak and "vin rouge" dinner for ourselves and the three cannibals comprising our crew.

Blaye is a very old and picturesque town, of typical southern French construction and architecture, very little of which is above the mediocre; by all odds the town depends on its antiquity and local color for claims to beauty and architectural interest. An old canal, half empty and muddy and slimy beyond all decency, cluttered with abandoned and rotting hulks, parallels the main street and is one item of noiseome interest if it has no beauty—it may be smelled if not seen. One or two interesting chateaux may be seen by diligent hunting; the Palais de Justice is more than a fair piece of architectural design; and an indifferent example of modern sculpture is represented by a fountain in the main square.

Blaye is a very historical old place; the Phoenicians, the Romans, and the old Moors each had their turn here; building up, tearing down, slaying, burning, yet never fully destroying the settlement; all is buried and out of sight as far as their work is concerned; but the work of the Norman pirates and the medieval princes is still represented by the ruins of the old Chateau of Caribert inside the Citadel. The Citadel itself is the thing to see, a mighty fortress designed by the great Vauban, once the pride of the region, but under bombardment of the various big-gun units I saw at the front it would last, on account of its size and not its strength, about three hours and two minutes.

But in the days of the tin-covered knight and horse, or in the early stage of artillery development the Citadel was impregnable. Mighty bastions, impassable moats, tremendous cliff-like walls of huge stones cut and laid in the strongest manner and battering or "tumbling home" to an unscalable overhang; no invader could have entered this great defensive work provided it was manned and defended by one-tenth of the number who assailed it.

The old chateau of Caribert was built about 600 A. D., according to a French sentry who left his post to show us around the Citadel. He was looking out of the tail of one eye for his commanding officer and out of the tail of the other for a tip, so, naturally, he was in a hurry, thus we did not stay in the Citadel as long as we desired. However, a view from the topmost walls gives one a magnificent panorama; the country-side when we saw it was very beautiful; tile-covered chateaux crowned the surrounding hills, each with its little village close by—a typical wine country landscape. To the south we had an extensive view of the Gironde, very wide at this point, also very dirty and very swift.

Several thousand "Prisonniers Allemands" were living in the Citadel; great, lazy, overgrown, well-fed and well-cared-for German huskies; not a worry in the world to wrinkle their brows or disturb their peace. Ages ran from boys of nineteen and twenty to men of thirty-five, and an occasional officer over that age, the great majority were twenty-five years old. They were a grateful lot, too. Some of them had been in Blaye since the days of August, 1914, and the later arrivals with their tales of increasing horrors and the life of hellish despair along the Hindenburg line, only increased the satisfaction and contentment of those who had been long-term prisoners—they had missed the blood and death and they were happy.

Having ordered our dinner before visiting the Citadel we found it ready when we got back to the little restaurant on the main street; soup, steak, French-fried potatoes, chicory salad, bread, butter, and wine, all that, and a pretty mademoiselle for waitress, too; and all it cost us was five francs apiece, or ninety cents. The same dinner, could it be found, in England, would have cost each of us the equivalent of five dollars, but lacking the mademoiselle; and in Washington we would have paid eight dollars each for the food, and missed both the mademoiselle and the wine.

The dinner finished we started for the dock with the thought of three o'clock on our minds. At the dock head was collected a good-sized crowd who were looking at the sea sled and commenting on its appearance and speed. The villagers were also being regaled with the wonders of seaplanes generally and of ours in particular by the gob called Stubb, who had hurried down his dinner and strolled out with a bright-eyed maid who had been introduced as mademoiselle's sister.

Our arrival stopped the oration and left Miss Brighteyes without a beau. The tide had gone much lower and we found it necessary to slide down twenty feet of rope to get to the sea sled. One by one the gang swung on board, leaving me standing on the dock head, and just as I leaned over to grasp the rope there approached a big man with enormous mustachios, and, what was equally impressive, dressed in the regalia of a Field Marshal in the Uniformed Rank, Knights of

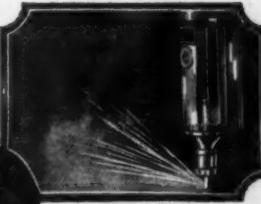
(Continued on page 94)



Installed in the engine compartment, the Boyce Automatic gets into action the instant the fire starts.



The chemical is sprayed over a wide area generating a gas which instantly extinguishes the fire.



MORE THAN A FIRE EXTINGUISHER

Fire is a menace greater than you are willing to admit. Daily you are faced with it. The motor-boat owner perhaps more than any one else is forced to consider it. There is no escape from fire at sea.

What you want is not so much an extinguisher as immunity from fire.

—And this is what the Boyce Veeder Automatic gives you. It extinguishes the fire itself.

This is more than protection. It is immunity.

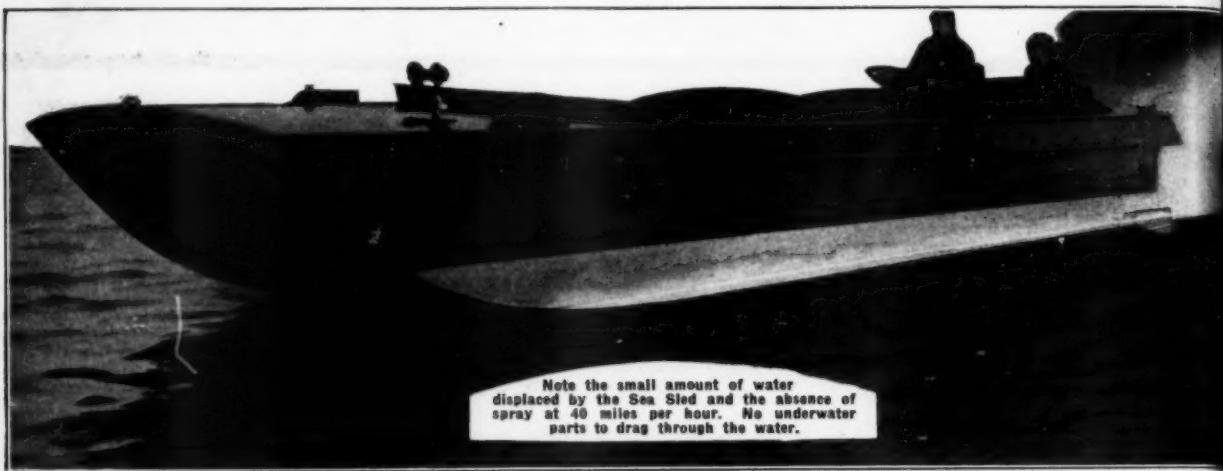
Model 2 (for motor-boats) \$8.00

BOYCE-VEEDER CORPORATION
Long Island City, New York



BOYCE AUTOMATIC FIRE EXTINGUISHER





Hickman Patents
in all
Countries

SEA SLED

TRADE MARK REG. U. S. PAT. OFF.

Inverted V-bottom
Surface-propeller
boats

"Incomparably the finest Sea Boat in the world"

Sea Sleds for Every Kind of Motor Boat Service

We want you to know what the Sea Sled is, and why it is what it is,—not merely to recognize it in a picture but to realize the revolutionary character and the thorough superiority of this marvelous new type of water craft.

The Sea Sled is marvelous, judged by every standard and every record ever established by the older type of displacement boat. It is marvelous, not only for what it has already done (mainly in high speed boats), but because the same Sea Sled principles will ultimately revolutionize the design and construction of motor boats for *any* class of service.

Speed Boat

Family Runabout

Yacht Tender

Express Runabout

Express Cruiser

Shoal-draft boat

Fast or Slow work boat

Ferry Boat

Naval rescue boat

Genuine Sea Sleds may be built in any of these classes, and, whatever the class, the Sea Sled will be found *more efficient* than any ordinary boat of the same size and power, for the same service. Whether we build it as a hydroplane or a displacement boat, high speed, medium or slow speed, Sea Sled principles remain the same.

During the war the development of Sea Sleds was conducted entirely under U. S. Navy Department supervision. The results of countless tests and experiments were guarded secrets, only recently released. Construction was confined strictly to naval types. Now Sea Sled principles are being applied to other classes of boats.

In design, in construction, in appearance, in performance, the Sea Sled is so radically different from any type of boat you have ever known that we take pleasure in explaining briefly, point by point, some of the details which experienced boatmen have found most interesting.

THE SEA SLED COMPANY

BOEING AIRPLANE COMPANY
SEATTLE, WASHINGTON

THE VIPER CO., LTD.
PICTOU, N. S.



A Few Sea Sled Principles and What They Mean

Inverted V-bottom Hull

From the front, the hull section looks like a broad V turned upside down. The bottom slopes downward from the center keel to the chines. This form prevents any bow wave or flying spray. The spray is thrown toward the center where it passes under the boat through the V, actually forming an air cushion when at speed. This air cushion helps the hull to plane easily, increases speed and load capacity, prevents pounding and makes it the most comfortable boat in a choppy sea. The broad area of support makes it the safest boat possible to build.

Surface Propellers

Large propellers with broad blades, only half the wheel submerged, have been found more efficient than propellers entirely submerged. Shallow water, only a few inches deep, can be traversed at full speed. Surface propellers cut their way through heavy weed growths without fouling. There is no submerged propeller boss, shaft, strut or shaft bearing to add resistance and decrease speed. A shaft bearing of ample size may be used because there is no water resistance to consider. The shaft is parallel to the water, eliminating a serious defect of most submerged propellers.

Side Plate Rudders

Sea Sled rudders give more perfect control, draw only a few inches of water, and as there is no submerged rudder post they cut their way through the water without resistance.

In these details the Sea Sled is supreme—

High speed for practical purposes.
Greater load capacity, size for size.
Comfortable in smooth or rough water.

Notably dry and free from flying spray.
Absolutely safe at all speeds.
Best for shoal or weed grown waters.
Easiest to control and maneuver.
Greater stability under way and at rest.

A Few Sea Sled Records

37 miles per hour carrying 24 passengers in a 32-ft. Sea Sled, planing perfectly with a total weight of 13,100 pounds. 34½ miles per hour with 34 passengers in the same boat.

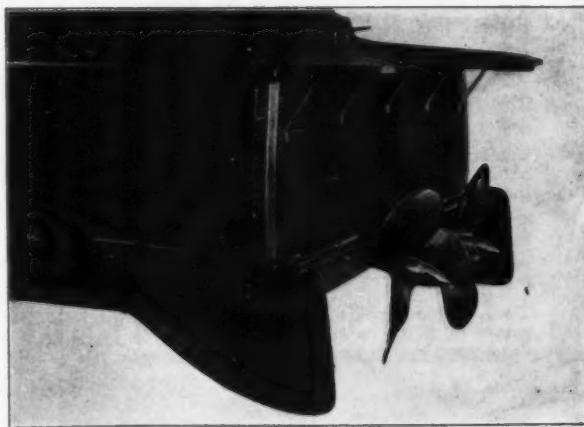
Over 55 miles per hour with a 50-ft. Sea Sled, carrying an airplane on deck in U. S. Navy trials.

Boston to Bay Shore, L. I., 256 miles in 8 hours, 5 minutes, against a 25-mile head wind, and in very rough water. Average speed 32 miles per hour. Two 32-ft. Sea Sleds.

Boston to Bar Harbor, Me., 230 miles in the open Atlantic, in 8 hours, 20 minutes. Average speed 28 miles per hour, 26-ft. Sea Sled.

And hundreds more.

Inquiries are invited. Write today for more complete details, stating your requirements



BOSTON
MASS. U. S. A.

THE
Carl G. Fisher Trophy

For Displacement Boat Championship of
North America

To Be Raced for Under the Auspices of
the American Power Boat Association

Designed and Made By

J. E. Caldwell & Co.

Jewelers Silversmiths
Stationers

PHILADELPHIA



The cup is of 14 karat gold and is seventeen inches high, exclusive of the black ebony base.

It is modeled on the graceful lines of the state cups of the middle ages.

The cover is surmounted by a correct model of the competing racing craft.

The body decoration consists of the laurel of victory and the trident and shells of the sea.

The flag of the American Power Boat Association with the anchor afoul, enameled in proper colors, is applied to the lower base.

Twelve gold shields for inscription of names of yearly winners, are applied to the ebony base.

Sea Sledding in France

(Continued from page 90)

Pythias; by his side, trundling a well-worn bicycle, was a bewhiskered Poilu, gaunt and tired-looking.

The resplendent one, who really ran the "Octroi" office in the public square, advanced to within a few inches of my ear and roared out, "Bon jour!" I agreed. Whereupon he informed me in a voice of thunder, that the Poilu was a resident of Pauillac, had been furloughed and was on his way home, was obliged to pedal from Blaye to Bordeaux and thence to Pauillac, a distance of sixty kilometers and a journey of six hours; would we take the brave "garçon" to Pauillac? We would. "Merci beaucoup! Grand merci! Mon Dieu! les Américains sont très expansifs! Voilà la bicyclette!"

Getting the Poilu and the "bicyclette" down the rope into the sea sled proved a hard task; the trusting soul would not part with a thing but tried to slide down the rope loaded with the "bicyclette," a trench bag, a rifle, a loaf of bread, a helmet, a blanket roll, and two German hand grenades. He started down slowly, but the great weight, assisted by gravity, got the Poilu on the run, and in an instant the collection fell with a thud on the deck of the barge. Amid a chorus of "Mon Dieu!" the gang picked the blue-clad hero up and stood him on his hind legs. He smiled gratefully and dragged the "bicyclette" and his collection of war gear to the sled and crawled over into the cockpit.

Taking my place in the cockpit and waving my smarting hand to the Field Marshal, I gave the order to, "Shove off!"

From the dock came many "Adieu's", "Bon voyages", and "Bon jours"; from the motors, "Br-r-r-r, put-put-p-u-t", and with a silvery fountain of spray from her stern the sled skimmed out into the tide. The Poilu gave an indifferent stare around and then started to roll a cigarette, but the paper and tobacco blew out of his fingers at every attempt. He then kneeled down under the forward overhang of the deck where it came out over the cockpit. This meant, of course, that he could see nothing going on outside of the sled, but he got an indifferent shelter in which to roll and light his cigarette.

While the bearded one tried his best to keep the tobacco on the paper long enough to return the tobacco bag to his pocket so that he could use both hands to roll the cigarette, the sled was gaining headway and tearing down river at a marvelous speed, the rushing wind and shifting squalls eddying in and around the cockpit and blowing the "makings" all over the boat. Then the Poilu, with a "Sacré bleu!" laid down on his stomach in the cockpit up against the side planking and got right down to business on rolling a cigarette.

If we made good time on the trip up the river we fairly flew on the way back; the sled drummed her way down river with a speed which made us wonder, and settled for me any argument against the sea sled as a method of getting from place to place on the water in the shortest possible time.

"C'est Pauillac!" he yelled, and away went the cigarette. "C'est ne possible pas!" And with wild eyes he looked back for Blaye, which town had now disappeared behind an island and a promontory on the north bank of the Gironde. With a despairing wave of his arms the soldier turned toward Pauillac, which was now well ast, and cried, "Nom du diable!" Sacré bleu!" and that awful French oath: "Name of a name of a name of a name!"

A few moments later and we and our guest, the Poilu, were standing on the dock at the Air Station. The return trip had been made in twelve minutes! When this was told the excited Frenchman he nearly fainted. "Ten miles in twelve minutes! Why, he would, in the ordinary course of events, have been traveling into Pauillac on his 'bicyclette' five hours and forty-eight minutes later, tired and dusty; and here he was at home; and in twelve minutes—Name of a name of a name of a name!"

Just then we heard the orderly at the O. D.'s office strike six bells. "Name of a Name!" we were on time!

How Much Do Marine Motors Cost?

(Continued from page 15)

is better suited to the work he has in mind the curves show that such a 12-h.p. model should cost about \$450 or about \$100 more in first cost than the two-cycle type. As the four-cycle motor will be at least twenty per cent. more economical than the two, an owner has only to determine how much running he is going to do in a season in order to calculate how long it will be before the difference in first cost is made up by the saving in fuel costs.

If a 50-h.p. motor is desired this should cost according to the curves slightly more than \$2,000 for the average type of cruising boat. If the boat is heavy or of the commercial or work boat type so that a heavy slow speed will be required then the cost of the power plant will go up considerably and one may have to pay as high as \$4,000 for the proper motor.

In a similar way from the curves shown it will be possible for one to determine the first cost of any power motor he has in mind.



THE HALL-SCOTT WAY

The installation of a 6-cylinder 200 H.P. Hall-Scott marine engine in the above pictured boat, replacing another make of 6-cylinder engine of larger dimensions but greater weight, increased the boat's speed more than four miles an hour.

No marine engine to-day can boast of finer constructive details or more consistently reliable performance.

No matter how good your boat may be, it can be made a better boat by the installation of a Hall-Scott marine engine.

*Write us about your boat and we will gladly
send you full information about our engines.*

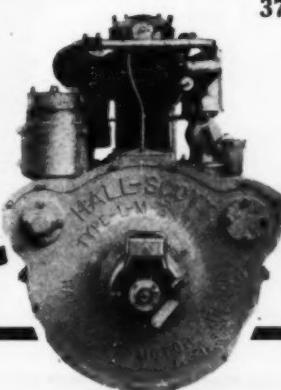
HALL-SCOTT MOTOR CAR CO., INC.

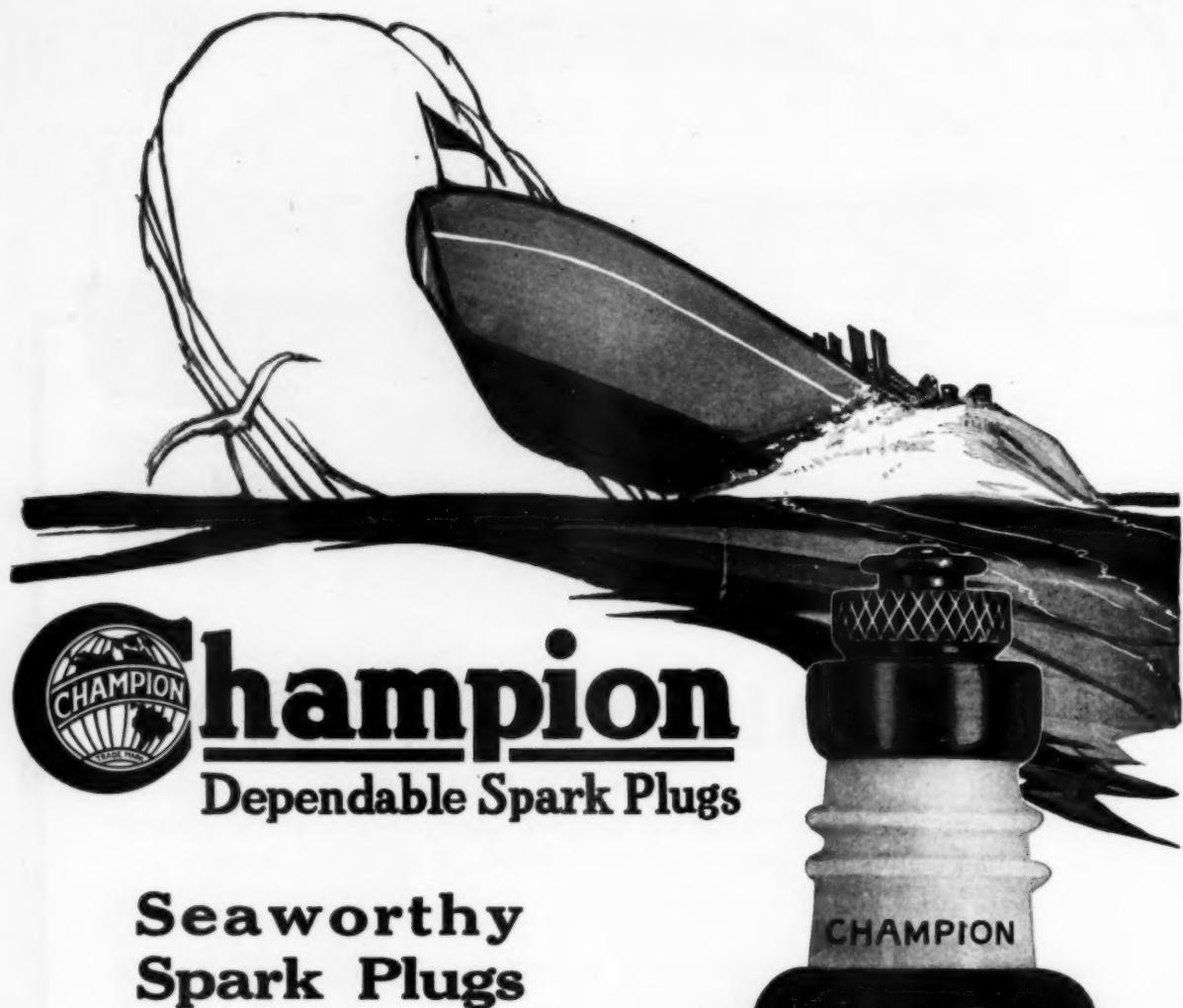
Factory: Berkeley, Calif.

37-39 Associated Service Bldg.

BUFFALO, N. Y.

HALL-SCOTT





Champion

Dependable Spark Plugs

Seaworthy Spark Plugs

THREE is no greater boon in power-boating than freedom from spark plug troubles.

When you set out with Champions you know that you have maximum spark plug protection because of the great strength of their No. 3450 Insulator.

It is practically immune to the ordinary effects of engine vibration and rapid temperature changes.

This great Insulator and our patented asbestos gasket construction give Champion Spark Plugs those qualities of dependability that have made them a favorite among engine makers and experienced boat owners.

There is a type of Champion Spark Plug specially designed for *your* engine.

Be sure the name Champion is on the Insulator and the World Trade Mark on the Box.



J. A. S. 43-76-18.
Price \$1.00

Champion Spark Plug Company

Toledo, Ohio

Champion Spark Plug Company of Canada, Ltd., Windsor, Ontario

Gray Marine Motors for 1920

The Motors with Big Strong Crank Shafts

Overhead Valves

This is the day of overhead valve motors. All the aeroplane motors—also the Reo, Marmon, Chevrolet, Buick, Nash and a host of others have adopted the overhead valve—it is more efficient, more powerful and more accessible.

Back-firing

This motor cannot backfire and set fire to your boat.

Kerosene or Gasoline

All gasoline now is poor stuff, the motor designed five or six years ago uses it, but not satisfactorily. It takes a different design of intake to properly use this low grade fuel. Our HOT SPOT cylinder head uses not only gasoline of the poorer grades, but even kerosene and gives absolute control, flexibility and a clean motor.

Gray 2 Cycle—3 to 8 HP.

Standard the world over.

Reliable—Economical



Furnished with Bosch Magneto with Impulse Starter—no batteries required

This model "VM" Gray 4 cycle motor marks an epoch in Marine Motor history. In this motor is embodied the results of the most modern gasoline motor practice and backed by an old established motor building organization and its experience.

Slow Speed 500 to 600 Rev.—10 to 12 HP.

Medium Speed 700 to 900 Rev.—15 to 20 HP.

High Speed 1000 to 1200 Rev.—20 to 26 HP.

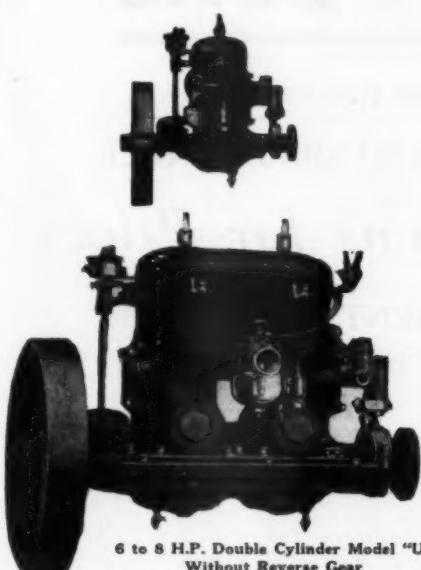
Guaranteed for Work and Pleasure Boats

Gray 4 Cycle Cylinder Motors

In three sizes 10 to 50 HP.

all valve-in-head

write today for 1920 literature



6 to 8 H.P. Double Cylinder Model "U"
Without Reverse Gear

**Gray Motor Company
Detroit, Mich.**

2106 Mack Avenue



TOPPING BROTHERS

Established 1885



MARINE HARDWARE
OF EVERY DESCRIPTION



One
Way Clutches

Distributors
of

Tarr & Wonson
Paints

BARKER MOTORS

The Leader in 2-cycle Class for twenty years.

MODERATE PRICE—SIMPLE AND DEPENDABLE

Send Your Specifications for Prices

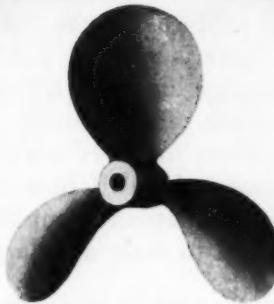
PROMPT SHIPMENT

From one of the LARGEST STOCKS in the United States

GENERAL OFFICES

122 Chambers Street - - - - New York

HYDE PROPELLERS



SPEED—EFFICIENCY—RELIABILITY

There is no use of our denying that

HYDE TURBINE TYPE PROPELLERS

are some wheels for speed—they have proved that by their remarkable performances.

But speed isn't their only quality. Ask the owner of any Hyde-equipped work boat what he thinks of Hyde wheels. He'll tell you that they stand the hard gruelling and deliver maximum efficiency. They are designed right, made of the highest grade bronze and finished by workmen who are experts in their line. That is why they "Deliver the goods."

Write for catalog and data sheet.

HYDE WINDLASS COMPANY
BATH, MAINE

Two New Motor Boating Hand Books Ready

THE IDEAL SERIES

Two new MoToR BoatinG Handbooks are now ready for delivery. The two new books are known as the Ideal Series and they fill a gap in our otherwise complete line of books for Motor Boatmen.

The new books deal exclusively with designing and building small motor boats. The titles are

Vol. I—Designs of Ideal Motor Boats.

This volume describes in detail how to design a motor boat. It also contains complete plans of 30 Cruisers, Runabouts and Auxiliaries. The plans include lines, table of offsets, interior plans, profiles, construction details, etc. There is no book published at the present time which describes in everyday language the details of designing a boat according to your own tastes. The plans of Ideal Cruisers, Runabouts and Auxiliaries are complete in every particular. They include the best of the plans published in MoToR BoatinG during the past several years. The plans include boats of from 20 feet in length up to 40 feet. The drawings are all to scale and large size.

Vol. II—How To Build Sixteen Ideal Motor Boat Boats.

This book gives complete information for building the following boats:

9-foot dinghy	20-foot monoplane
10-foot mark boat	20-foot hydro-runabout
12-foot outboard motor boat	20-foot knockabout
12-foot speed boat	20-foot tunnel stern
12-foot bangabout	22-foot V-bottom runabout
13-foot sea skiff	25-foot V-bottom cruiser
16-foot sharpie	25-foot round-bottom cruiser
18-foot runabout	28-foot cruiser (Consort II)

Every article is fully illustrated with working drawings and no information or instructions are missing which would be of assistance to the novice to build his own boat.

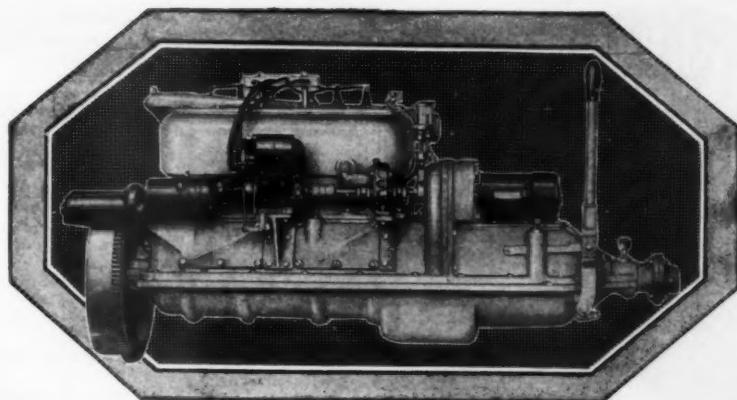
Both of the Ideal Books are printed in large type on extra fine paper. They have been edited by Charles F. Chapman, editor of MoToR BoatinG.

Price \$2.00 each or the two books for \$3.00

MOTOR BOATING

119 West 40th Street

New York



KERMATH

*"America's Standard
Four Cycle Engine"*

**Kermath Preference Begins and Ends
With Standardization**

THE insistent demand for standardized marine motor service is particularly gratifying to us.

Because it vindicates so clearly a policy that has been pre-eminent in Kermath manufacture ever since we entered the business.

Kermath is a pioneer in standardization. It is the one marine motor in which parts have been interchangeable from 1912 to 1920.

Fundamental standardization is the reason for the phrase that you commonly hear, "A Kermath Always Runs."

It explains why for years Kermath has been accepted by 60 per cent of the boat builders as "America's Standard 4-Cycle Engine."

It is the development of this idea that has brought leadership to Kermath in the foreign as well as the American fields.

As a reason for this continuous and consistent policy of standardization, Kermath has gathered around it the very best motor boat dealers and builders everywhere.

Look up a Kermath dealer in your vicinity and you will see that what we state to you is a fact.

Write Dept. D for the Kermath booklet—it will interest you immensely whether you own a boat now or consider buying one.

**"A Kermath
Always Runs"**



—**KERMATH M'g Co.**—
DETROIT **MICHIGAN.**



Up the Loghaul to the Largest Mahogany Sawmill

HOUR after hour the giant mahogany logs from Africa and Central America ride up this great loghaul to the largest mahogany sawmill on the Atlantic and Gulf Seaboard—the last leg of their journey through the largest complete mahogany lumber and veneer organization in the United States.

Astoria Mahogany Company, Inc. 347 Madison Avenue, New York

Successors to

Huddleston-Marsh Mahogany Co.
Astoria Veneer Mills and Dock Co.
F. W. Kirch, Inc.

Mills and Yards, Long Island City, New York

BRANCHES:

44 North Market Avenue, Grand Rapids, Mich.
2256 Lumber Street, Chicago, Ill.

From New England to the Chesapeake

(Continued from page 24)

3 o'clock the engine stopped dead. At the same time a large fish dashed along side. It might have been a hungry shark looking for a meal. The captain went below and on investigation found that the points of the vibrator had stuck together. These were quickly adjusted, and the faithful Doman again set to work at its all important task. Too bad the vibrator failed. It might have been a perfect score to New York.

At about eight bells what looked like a good sized four-story city passed us very close on the starboard side. Flashing our searchlight on the monster we made out the Commonwealth of the Fall River Line. Just before daylight we began to see the flashing light of Stratford Shoal which was abeam at 5.05. At 5.30 the parson and the commodore came on deck relieving the captain and second mate. The former, having had only a couple of hours sleep in the twenty-four (having to act as engineer for both watches), quickly sought his bunk, and was soon in the land of dreams. Awaking about eight, and feeling a vacuum where his stomach was supposed to be, concluded it was about time the crew had their eats; getting busy, he soon had an appetizing breakfast of bacon and eggs, canned soup, home made bread, and coffee made in a percolator. To smell and drink this brew was one ecstatic joy.

The meal being disposed of, we spent the rest of the forenoon enjoying the beautiful views opening up on the Long Island shores, and the head of the sound. Photographs were taken when good views presented themselves. Passed Eator's Neck Light at 7.50, Lloyd's Neck Bell Buoy at 8.50, Oak Point at 9.35, Matincock Gas Buoy at 10.10, Prospect Point 11.09, and at 12.40 anchored inside College Point. Here we made a stop of two hours and a half. All went ashore except the parson and the mascot. The second mate, recently engaged to one of the fair sex, quickly disappeared in the telegraph office to wire his safe arrival. This, he had been tearfully admonished to do at least a hundred times before his departure. The commodore went in quest of the inevitable cigar for which he is noted.

The captain after walking his legs off, and making many inquiries, found his friend. On the way back he came across the second mate entering the post-office with a good sized bundle of picture cards.

While the shore party had been attending to their various affairs, the parson had prepared a dinner to which we did ample justice. Weighed anchor at 3.10 and headed for Hell Gate. Took snap shots of the great arch that supports the span of the new bridge. It is a great piece of engineering being different from all the other bridges. Passing through the Gate with a fair tide we entered the East River. At one point half a dozen steamers, tugs and ferry boats plowed by, kicking up the worst sea we had experienced on the trip. The good ship Safety almost stood on end (so it seemed) and came down with a tremendous bang. The parson made a dive for the galley and got there just in time to save our supper which was in the making. The cat dozing on the door sill, made an acrobatic tumble down the companion way, landing in a heap at the bottom. Thinking we surely had entered the place suggested by the Gate, she crawled under the stairs and remained in strict seclusion until things quieted down. Water came over the bow for the first time on the cruise.

The passage through the East River was quickly made, the tide seeming very anxious to get us through. Some contrast to a previous trip when we were towing a 34-foot power boat against a head tide. The average speed then was half a mile an hour, while we were now averaging at least ten.

Clearing Governor's Island, we headed across for the Kills, and about eleven o'clock we anchored near Perth Amboy. After warming the inner man with hot coffee, we turned in.

Next morning, Wednesday, turned out at 4.45 to run round the point just ahead, to take on gas. At the Texas wharf found no juice could be had until seven o'clock. While waiting, the captain and the crew went up town for a couple of spark plugs and a few minor supplies. On our return we soon had the gas stowed away, and clearing the wharf, headed for the Raritan River. After passing the two draw bridges, we followed a tug towing a barge up the winding channel.

Passed Sayreville (a place of many bricks) at 8.42. Coming to a place where the river divides into two streams, we wisely kept to the right. On our previous trip we had taken the left hand channel, which landed us five miles up a creek as crooked as a pig's tail.

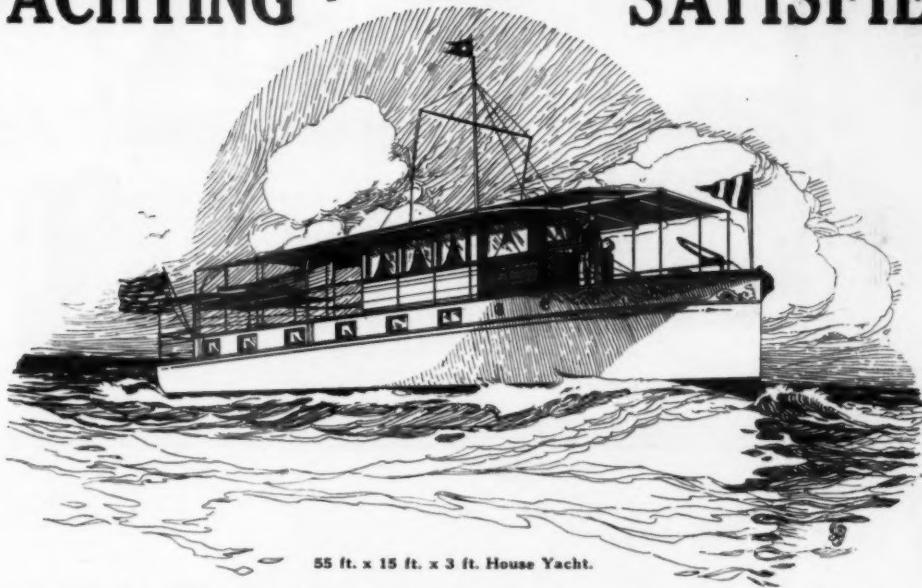
Once by the marshes (breeding places of the mosquito), the scenery becomes very interesting. The soil takes on a beautiful red color, one of the first things a stranger notices upon coming into the State of New Jersey. Along the river, in spots, beautiful cliffs of red shale rise from the very bank.

At 9.40 we locked into the Delaware and Raritan Canal. After pay the fee, and getting our clearance papers, we throttled down to a six and a half mile gait, the speed limit of this water way. Had no more than got under way, when we had to throw out the clutch and blow for a draw bridge.

(Continued on page 108)

MAKERS OF FINE YACHTS.

YACHTING THAT SATISFIES



55 ft. x 15 ft. x 3 ft. House Yacht.

This will be a big yachting year; why not enjoy the wonderful comfort of a houseboat? Economical in operation. A boat on which guests, owner and crew are all

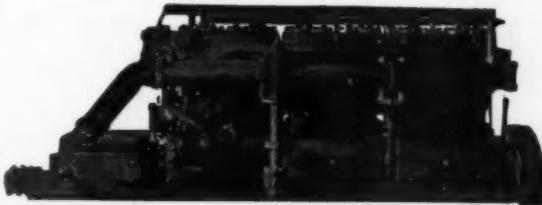
SATISFIED

FOR SALE OR CHARTER

Two 85 ft. House Yachts are now in commission, and two 73 ft. House Yachts will be ready for delivery July first. Write or phone for complete specifications.

20th CENTURY MOTORS

Continuous
Satisfaction
for Nineteen
Years is our
Record



Built in sizes:
2-Cyl.... 15-20 H.P.
4-Cyl.... 40-50 H.P.
6-Cyl.... 65-75 H.P.
All 6½" Bore x 8½" Stroke

HEAVY DUTY TYPE

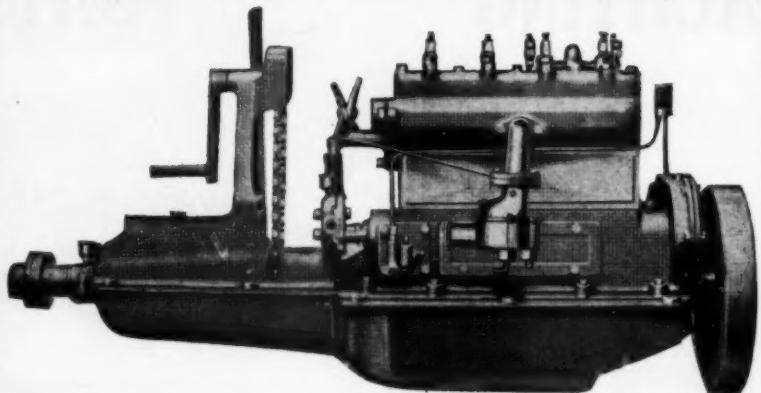
6 cyl. 65-75 H.P.

YACHTS AND HOUSEBOATS



NEW YORK YACHT, LAUNCH & ENGINE CO.
→ BUILDERS →
MORRIS HEIGHTS, NEW YORK CITY.





THE WORLD'S STANDARD SMALL MOTOR



Universal
MOTOR

As nearly perfect as it
is possible to build a
motor, the Universal will
bring you pleasure and
satisfaction heretofore
unknown to motor boat-
men.

Let us tell you all
about it in our Latest
Bulletin No. 29.

UNIVERSAL MOTOR COMPANY

OSHKOSH

WISCONSIN

J O E S REVERSE GEARS

The ideal connection between motor and motion. Strong, efficient, reliable; adapted to every need and speed.

Joes Duplex Drive is made in two types. The regular type is designed for work on medium and heavy duty work boat engines where reversings are frequent and the quick action of a very high reverse speed ratio is important.

A special type of **Joes Duplex Drive** is adapted to high speed racing boats where great holding power in small compass is vital.

Joes High Power Gears are made primarily for small, high speed motors, but are adapted to all motors within their range of power.

Joes Husky is designed for Diesel and Semi-Diesel engines where great strength and durability, coupled with a high reverse speed ratio, are imperative.

Joes Husky has been selected by the manufacturers of Mianus, Midwest, Nelseco, Kahlenberg, Gulowsen Grei, Venn-Severin, and other well known engines of this type.

Joes Safety Rear Starters make cranking safe and easy. Noiseless, strong, adaptable and efficient. Thousands in use.

Joes One-Way Clutches. A strong and reliable low priced clutch for fishermen's use; also a very light and powerful clutch for high speed, or for any transmission where compact strength is required.

Send for Complete Descriptive Literature

The Snow & Petrelli Mfg. Co.

156-B, Brewery St., New Haven, Conn.

Agents

New York City—Sutter Bros., 44 Third Ave., Service Station foot of East 92nd St., Brooklyn.

Seattle, Wash.—Pacific Marine Engine Co.

Philadelphia, Pa.—W. E. Cochenour Mfg. Co., 631 Arch St.

Southern California—Fellows & Stewart, Inc., Wilmington.

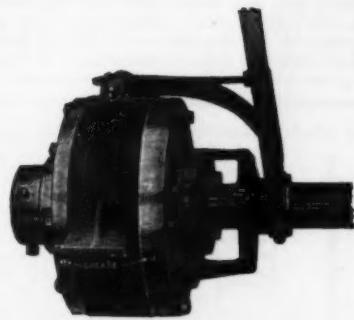
San Francisco, Cal.—A. G. Hegben, 440 Market St.

Toronto, Canada—A. R. Williams Machinery Co.

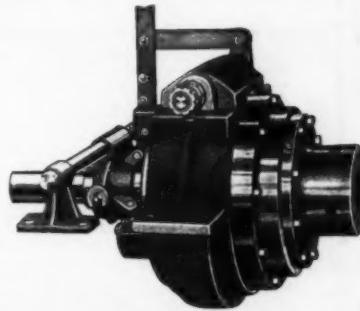
Montreal, Canada—The Pyke Motor & Yacht Co.

England—J. King & Co., 10 Church Row, Limehouse, E. London.

Norway—Arendahl Motor & Machine Co., Arendahl.



Joes Duplex Drive
88% Reverse Speed Ratio



Joes Husky Gear
85% Reverse Speed Ratio



Joes Safety
Rear Starter
No "Kick Back"

MOTOR BOATING PRACTICAL HAND-BOOKS

Every motor boatman has long felt the need for a really complete and comprehensive library devoted to their favorite pastime—motor boating. One of the obstacles to the accomplishment of this important work was the difficulty in finding any one writer who could cover the field in its entirety. In presenting the new series of practical handbooks, MoToR BoatinG believes that the problem has been solved at last. These books are edited by Charles F. Chapman, M. E., the editor of MoToR BoatinG, and they are the results of months of untiring effort on his part, together with the best of thousands of suggestions sent to him by motor boatmen themselves. The list of the contents given below will give you some idea of the vast amount of ground covered by these volumes.

Practical Motor Boats and Their Equipment

Volume 1.—The first volume tells you what the ideal boat for various kinds of service should be and what to look for in buying a boat. Many suggestions about decoration and hints on all kinds of equipment. All about steering gears, wireless outfit, electrical attachments, etc. Glance over the list of contents appended herewith: Hulls, Ballast and Seaworthiness; Round Bottoms vs. Sharp Bilge; What are the Advantages of Flare? Raised Deck vs. Trunk Cabin; Best Proportion of Beam to Length; Selecting a New Design; The Advantages of Bilge Keels; Open or Solid Deadwood? What Makes a Hull Seaworthy? The \$1,000 Cruiser; Buying a Second-Hand Boat; Types of Bows and Sterns; Exterior Arrangement of Cruisers; The Best Cabin Arrangement; Finishing Up the Cabin; Changes in Interior Arrangement; Interior Arrangement for Open Boat; Propeller-Rudder Arrangements; Best Position for the Rudder; Advantages of the Outboard Rudder; Different Steering Positions; Steering Equipments for Motor Boats; Steering Gear for the Cruiser; The Steering Gear for a Runabout; Steering the Boat from the Side; The Electrical Equipment; Making and Wiring a Switchboard; Electric Lighting on a Motor Boat; The Inexpensive Lighting Outfit; Wiring the Small Cruiser; The Storage Battery; The Dynamo Cut-Out; Wireless for a Small Cruiser; Tender for a Thirty-foot Cruiser; Building a Folding Dinghy; Installing the Boat Boom; What is the Best Galley Arrangement; Ventilating the Galley; The Galley Stove and Its Installation; Making a Fireless Cooker; A Portable Cook Box; Running Water for the Cruiser; How to Build a Portable Table; A Table for the Open Boat.

Practical Motor Boat Building

Volume 2.—As its title implies, this volume takes up the building of your own boat. It also covers the construction of the necessary fittings such as awning, windshield, etc. Every boatman sometime or other builds a boat, and a book of this kind will save much time and prevent many mistakes. List of contents: Types of Motor Boat Fastenings; Boat Building Woods; Laying Down a Boat's Lines; Converting a Trunk-Cabin Cruiser; A Steam Box for Amateur Builders; Joiner Between Stem and Keel; Fastening the Frames and Floors; Boring the Forgotten Limbers; Fitting the Garboard Plank; Boring the Shaftlog; Fitting the Stuffing Box; The Stern Bearings for Cruiser; A Water-Tight Companionway How to Make a Canvas a Deck; Hinged Water-Tight Hatchets; Making a Water-Tight Hatch; The Coaming of an Open Boat; Fitting a Swinging Port Light; Making a Self-Bailing Cockpit; A Water-Tight Wil-low Sash; Making a Water-Tight Skylight; How to Build an Engine Housing; How to Make an Engine Cover; Building a Tool Locker; Constructing an Extension Transom; How to Make a Pipe Berth; An Ice-Box for a Cruiser; Installing a Toilet; How to Rig a Signal Mast; How to Make a Spray Hood; Fitting a Folding Windshield; An Awning for the Open Boat; A Cover for the Open Cockpit; Screens for the Side Light; A Support for the After Light; A Seat for the Man at the Wheel; Removable Davits for the Cruiser; The Boarding Steps; A Bow Rudder for Your Hydro; The Motor-Driven Club Tender.

Practical Things Motor Boatmen Should Know

Volume 3.—Navigation is one of the important subjects covered in volume three of the series. Tells you how to steer, how to increase the factor of safety, and a host of other things relative to the proper running of your boat. The chart and compass are both fully explained in a clear and comprehensive manner. The list of contents will tell you more about it; Advice for the Beginner; Lessons Learned from Experience; Good Things to Know; Increasing the Factor of Safety; Which Way Should the Boat Steer? Why a Boat Steers Badly; Why do Boats Squat? Figuring the Boat's Speed; Ballasting the Cruiser; Getting Off Bottom; To Ride Out a Storm in a Motor Boat; The Why and How of Storm Oil; Preventing Fire; Handling Ground Tackle; Government Charts; Stowing the Anchor on Cruiser; Diminishing Deviation; Preventing Electrolysis; Stowing and Using Charts; How to Make a Chart Case; Keeping a Motor Boat's Log; How to Make a Sextant; Tides and Tidal Waters; Taking Her Through the Canals; The Best All Round Dinghy; Towing the Tender; Handling the Dory in a Seaway; Getting the Tender Aboard; Planning for a Cruise; Equipping for a Cruise; Equipment for Offshore Cruising; Novel Events for Regatta Day; Handicapping; The Object of a Handicap Rule; Laying Off a Race Course; Measuring the Length of a Race Course; Preparing a Boat's Bottom for a Race; How to Build a Turning Buoy; Starting Boats in a Race; Stowing the Signal Flags; Fitting a Gun Mount; A Fish Box for Your Cruiser; A Cabin Wall Rack.

Practical Marine Motors

Volume 4.—All about the marine motor; what it should and should not be. Tells why the automobile engine is unsuccessful in marine work. The best location for your engine, the ideal engine bed, the fuel tank, exhaust and countless other suggestions that will enable you to get the best results from your power plant. List of contents: Purchasing a Marine Motor; How Many Cylinders? Power per Cylinder; High Speed vs. Heavy Duty; Long Stroke vs. Short Stroke; Correct Motor Design; Changes in One's Power Plant; The Things that Cause Vibration; The Automobile Engine for a Boat; The Best Position for the Motor; The Ideal Engine Compartment; Placing the Engine in the Hull; Installing a Motor in a Canoe; Installing Power in a Yawl; Converting a "Banker" to Power Engine Installation in a Hydroplane; Putting Power in the Rowboat; Limits of Shaft Inclination; Constructing the Engine Bed; Getting the Motor Aboard; Lining Up the Propeller Shaft; The Best Exhaust; Mufflers vs. Under-Water Exhausts; Installing an Under-Water Exhaust; Primary Batteries for Ignition; Keeping the Ignition System Dry; Installing a High-Tension Magneto; From Make and Break to Jump Spark; Installing the Gasoline Tanks; Taking Care of Extra Gasoline; Spark and Throttle Controls; Constructing a Rear Starter; Propeller for Engine and Hull; Installing a Universal Joint; Gearing Motor to Propeller Shaft; The Automobile Throttle; Harnessing the Main Engine; Rebabbitting a Worn Bearing; Should Fuel Line be Inside or Outside.

Practical Motor Operation and Maintenance

Volume 5.—One of the most valuable books of the entire set. Your motor's ills and how to cure them. This volume tells you how to adjust your carburetor, how to fit piston rings, how to remedy poor compression and a number of other things that will enable you to doctor your own motor. List of contents: Locating the Motor's Troubles; The Overheated Motor; Starting in Cold Weather; Overhauling a Marine Motor; How to Save Fuel; The Fuel Situation; Using Low Grade Fuel; How to Run on Kerosene; Supplying the Fuel to the Carburetor; Adjusting the Carburetor; Cleaning the Fuel Tank; Cleaning the Gasoline Line; Stopping Up the Leak in the Tank; A Home-Made Gasoline Gauge; Carrying an Extra Supply of Oil; Mixing the Fuel and Lubricant; Remedy Leaky Compression; Killing the Carbon Jinx; Tool and Spare Parts to Carry; Removing and Replacing Piston Rings; Repairing a Leaky Cylinder; Grinding a Motor's Valves; Setting the Valves; Timing the Ignition System; Cleaning the Water Jacket; Making and Fitting a Gasket; Patching Up a Bearing; Straightening the Sprung Shaft; Truing a Bent Propeller; Removing the Flywheel; Separating Couplings and Pipe Fittings; Changing the Shaft Hole Location; Utilizing the Exhaust; Disposing of the Bilge Water; Heating a Small Cruiser's Cabin; Operating the Outboard Motor; The Clean and Quiet Boat; Charging a Storage Battery; When the Motor Stops Unexpectedly; Making a Unit Power Plant.

Practical Suggestions for Handling, Fitting Out and Caring for the Boat

Volume 6.—This volume is an especially valuable one. You will find in it points covering the care of your boat that you never dreamed of before. Whether you are a beginner or a finished expert, this book will give you a better knowledge of the handling of your craft than you can imagine. List of contents: Putting the Boat into Commission; Fitting Out a Thirty-Footer; Suggestions for the Beginner; Refinishing Bright Work; Keeping the Wood Surface Bright; Putting the Boat Out of Commission; Laying Up an Unsheltered Boat; Hauling Out for the Winter; Covering the Boat for the Winter; Launching from a Wharf; Correcting Faults; Lengthening Out the Boat; Moorings and Buoys; Taking Steps to Safeguard the Anchor; What to Use in the Bilge; Preserving the Wood in Boats; Emergency Rigs for the Cruiser; Auxiliary Sails for the Cruiser; Providing an Emergency Rudder; Preparing for Southern Waters; Stopping the Troublesome Leak by Replacing a Broken Plank; Removing Broken Lag Screws; Raising the Boat's Stern; Cleaning the Propeller; Protecting the Bow and Stern; Open Boat Sleeping Quarters; Ventilating the Cabin of Small Cruisers; Converting the Open Boat to a Cruiser; Making a Cover for the Open Boat; Preventing Electrolysis; Building a Club Float; A Floating Boathouse; Constructing a Landing Stage; Building the Marine; Keeping the Thief Out; A Place for Your Shore Clothes; Stowing for Life Preservers; The Winter's Alterations; What Changes Shall I Make; The Satisfactory Bilge Pump; The Pressure Water System; Making a Pelorus; Your Storm Curtains; Life-Saving Equipment; The Absent Owner's Anchor Light; Mounting the Reverse Gear.

Price \$1.50 Per Volume, or \$7.50 Per Set of Six Volumes of Over 1,000 Pages

The books measure 7 x 10 inches and are handsomely bound in cloth. Each volume is fully illustrated and printed in clear type on fine paper.

MoToR BoatinG

119 West 40th Street, New York

Advertising Index will be found on page 118



When the Wind fails —Start your FRISBIE

YOUR summer cruise will be more delightfully care-free if you have the reliable power of a Frisbie-Valve-in-Head Motor to fall back upon.

Its constant readiness when wanted, its simplicity of operation and utter constancy of performance, coupled with its ability to produce plus-power from any kind of mixture, make the Frisbie a desirable auxiliary power plant for sailing yachts or small cruisers.

Write for the new Frisbie catalog and the name of your nearest dealer.

Frisbie Motor Company

7 College Street, Middletown, Conn.

1 cyl. 5 and 7 H.P.
2 cyl. 10 and 16 H.P.
3 cyl. 18 and 25 H.P.
4 cyl. 30 and 40 H.P.
6 cyl. 50 and 75 H.P.

ALL FOUR CYCLE
KEROSENE OR
GASOLINE

Frisbie am' I



When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating

As American as the Skyscraper

The Woolworth Building would be impossible of location in any but an American city.

Just as distinctively is the Mathis-built Houseboat the product of an American Yard.

It provides a palatial home—complete—on the water, with every appointment and convenience for the enjoyment of perfect comfort and ease. Add to this the charm of mobility and it is not hard to understand the reason for Mathis leadership in the houseboat field.

MATHIS-BUILT HOUSEBOATS

have been the features of the past eleven seasons in Florida. Up the tortuous streams, that abound in Southern waters, they have cruised season after season. Off the coast, they have proved as seaworthy as any type of craft.

Get the Mathis estimate when your plans and ideas are ready.

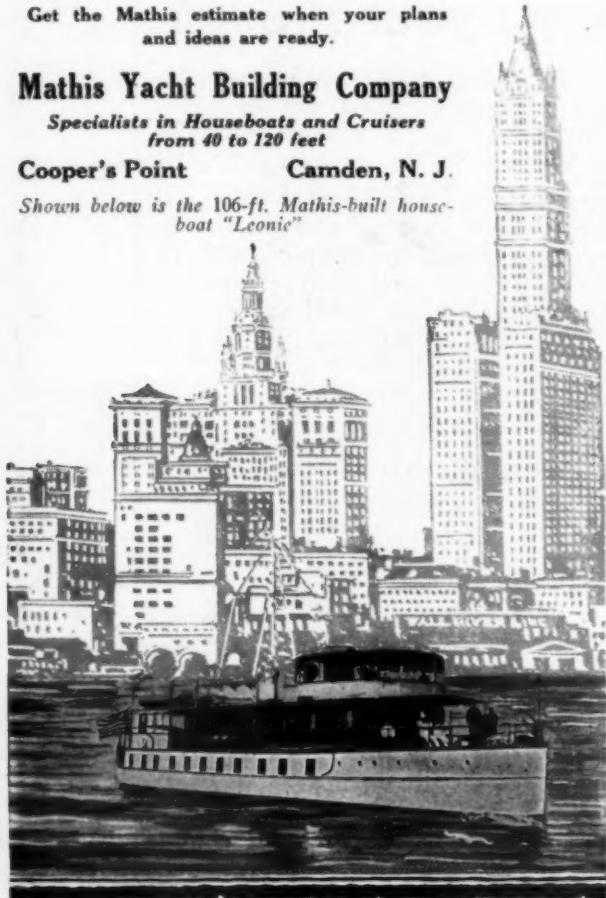
Mathis Yacht Building Company

Specialists in Houseboats and Cruisers from 40 to 120 feet

Cooper's Point

Camden, N. J.

Shown below is the 106-ft. Mathis-built houseboat "Leonic"



From New England to the Chesapeake

(Continued from page 102)

Getting through, the high arches of the Pennsylvania R. R. bridge loomed up ahead. The clearance being 50 feet, safely went through with room to spare.

If you observe the following directions, locking is easy. Enter slowly; stay near the end entered at, and keep cool. We enjoyed the canal as much, if not more, than any other part of the trip.

After navigating the heaving ocean, the long passage of the Sound, the crowded waters of New York, the winding Kells, and the Raritan River, it seemed like a fairy tale, sailing across the beautiful State of New Jersey on the peaceful waters of the canal.

Each lock lifted us higher until Trenton was reached. Well, it was delightful. We took snapshots along the route, and the pictures will be a source of pleasure in the years to come, as they will conjure up pleasant memories.

In the captain's mind no sport can beat motor boating. The peace, joy, and healthful recreation it offers has no equal.

The scenery is beautiful almost the entire length of the canal. Many farms line the port bank, on some of which stock is raised. We saw large numbers of cattle and hogs feeding (for our future benefit undoubtedly). On the starboard side the canal follows the river, which, at times, rushes over rapids and at others flows peacefully along, always beautiful. A charming spot is the lake and grounds of Princeton College.

Our hopes were set on getting through before dark. About three o'clock, however, the railroad bridge of the Princeton Branch loomed up ahead. Finally a man appeared and calmly informed us that we could not get through until five o'clock. Some setback. We had to make the best of it, so tied up to the bank.

After waiting for an hour or more, we were allowed to go through. Darkness fell before we reached Trenton, and to make matters worse, a dense fog came with it. It was impossible to see a boat's length ahead. Then something almost happened. Looking for bridges low down, as most of them are, suddenly, one appeared at the mast head. It was jam back the clutch and hold our breath, but the Doman was there with the goods. The Safety came to a standstill with the truck but a few inches from the bridge. Close call that. Recovering our breath, we blew for the draw, got through safely but immediately sighted another bridge dead ahead. Here, the genial draw tender advised us to tie up in the basin, as further progress would be dangerous, owing to the steamer and barge traffic. Acting on his advice, we moored Safety out of the way of passing vessels.

Time: Six bells.

Donning shore duds we were soon ready for a cruise up town by trolley. Arriving at the center, the commodore and the S. M. made the usual dash for the Western Union, and soon the wires were hot with burning messages as per College Point. The captain made his way into an ice-cream parlor, while the person, standing on the corner, became a spectator to a lively scrap. An officer arrested a man who fought like a fiend.

The crew having attended to their various affairs came together, and laid a course for a picture card establishment. Loading up with a large assortment a new course was set for the Post Office.

Next morning, bright and early, much refreshed by the night's rest, we cleared the Mulberry Street Bridge at 6:30, hoping to make a quick run through the remainder of the canal, and down the Delaware to Essington, Pa. But alas for our hopes! We shall always remember Trenton as a place of many bridges and pottery factories.

Coming to the railroad bridge where the feeder enters the canal, we found that the bridge could not be opened for some time so we moored Safety to the bank. The captain went below to stop the engine, and lo his heart almost broke. The faithful Doman was a smoking mass of red iron, but running as steadily as ever. The switch was quickly thrown off and an investigation showed the pump broken clean off. The upper check had worn itself through the seat, and the plunger coming up caught it sideways and of course the pump had to go. Well, nine years is long enough for any pump. It was some predicament. A broken pump, and the engine factory a thousand miles away. It did not look like Essington that night.

The captain had run up against many cases of this kind during his experience as a boat builder, and he knew what to do. Taking the two parts of the cast iron pump, inquiry was made for an acetylene welding establishment. A garage was recommended on a certain street where this work was done and it was soon located, and the pump was welded inside of an hour at the small cost of \$1.

Setting a new course for a machine shop, which we quickly found, luck again favored us. After an hour's work a new valve was fitted, and the pump was now ready to go back.

(Continued on page 112)

NELSECO

**HEAVY
OIL
ENGINES**

DIESEL TYPE



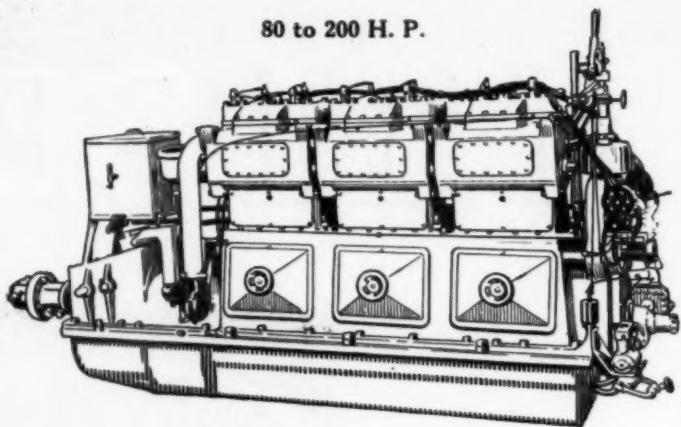
**America's First Marine Diesel
Engine Builders**

**Over 150,000 B.H.P. now in use or on Order
Size 120 B.H.P. and Upwards**

Winton

**Gasoline
Marine Engines**

80 to 200 H. P.



No Need to "Worry Along"

Too many marine engines are built "to strike an average." This means that if you do not expect too much from them, you will not be greatly disappointed. Somehow or other you will be able to worry along.

For many years Alexander Winton was a marine engine buyer and user. He "worried along" too. He went thru the same experience that many other yacht and boat owners have endured.

After a ripe experience, and knowing the need of engines whose performance would be above the average, Mr. Winton became a marine engine builder. In a

splendidly equipped and most modern plant, devoted exclusively to marine engine production, Mr. Winton now builds Winton Gasoline Marine Engines in five sizes, ranging from 80 H.P. to 200 H.P.

Details of these six or eight-cylinder engines are now available in a new booklet, copy of which we shall be glad to send you on request. Also, our Engineering Department is ready to co-operate with you and your Naval Architect in working out a happy solution of your precise needs for either yacht or workboat. We shall be pleased to have you write us.

WINTON ENGINE WORKS

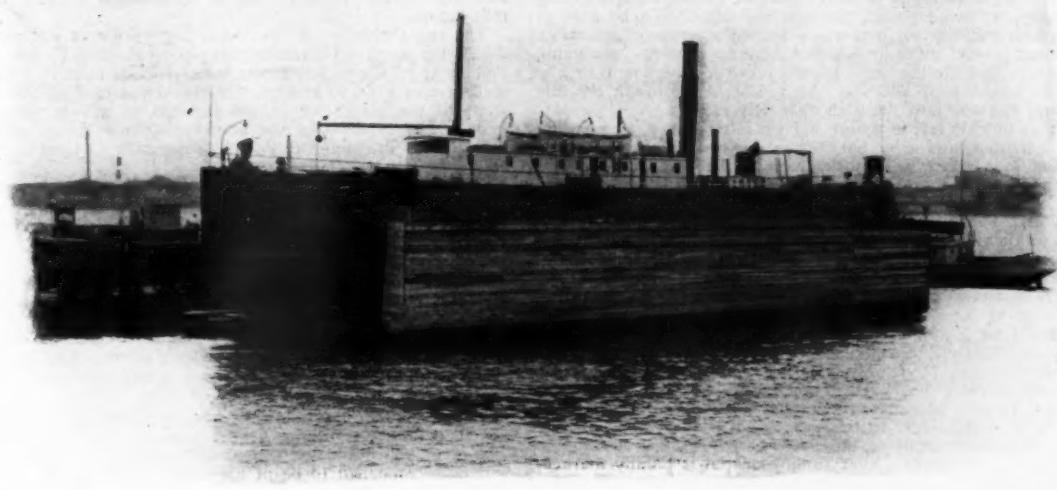
2122 WEST 106TH STREET

CLEVELAND, OHIO

Dealers: New York—A. G. Griese, 120 Broadway.
New Orleans—A. Baldwin & Co., Ltd. Jacksonville,
Fla.—D. J. Garrison & Company. San Francisco—
F. G. Bryant, 424 Ellis Street. Seattle, Wash.—
H. W. Starrett, Sunset Engine Co.

"GIBBS QUALITY"

REPAIRING—OVERHAULING



NEW 1200 TON FLOATING DRY DOCK

This dry dock has just been placed in commission and is available for the hauling out and repairing of yachts, houseboats and pleasure boats of every description. We have completely equipped, machine shop, joiner shop, paint shop, blacksmith shop and a large force of skilled workmen. We also carry a large stock of all the materials required for repairing and overhauling boats. This enables us to undertake and complete extensive or minor repairs without delay.

The importance of proper care of the boat cannot be overestimated. It pays to select a capable and well equipped organization when in need of repairs to your boat or yacht.

This dry dock is 156 ft. long on the keel blocks and 52 ft. between wing walls.

We are builders of pleasure craft of every description.

GIBBS GAS ENGINE COMPANY
Jacksonville, Florida

From New England to the Chesapeake

(Continued from page 108)

Hustling back to Safety the captain set to work to replace the pump. In the operation, a brass nipple was twisted off, necessitating a trip to the plumber's. After much sweating and welding of many wrenches the job was pronounced done, much to the relief of all concerned.

During the time the captain was busy with the pump, the other members of the crew had not been idle. The parson thoroughly washed the outside of Safety, filled the water tanks, and prepared an excellent dinner. Meantime the commodore had made the acquaintance of half of the inhabitants of Trenton, approximately. Hunting up the mascot and coaxing her back to the boat occupied no small part of his time. On one occasion he found her walking up the tracks looking for a train back to old New Bedford.

At 1.10 we were ready to start anew, so, casting off and getting underway, we were passed through the draw. To be able to proceed on our way so soon was a source of great gratification.

Passing several more bridges we came to the first lock going down. Locked all the way down to Bordentown in company with the power boat Wethera. At 3.30 locked through the last lock and ran out into the Delaware River.

Wethera quickly left us astern but we felt no envy, as we were very contented, and why not? The day was glorious, engine running fine, larder well stocked, crew, the best of good fellows, singing in chorus "Happy Days".

Bucking a head tide down the river, cut our speed to about six miles. That meant Essington about ten o'clock, but as the moon was about full we looked to an enjoyable moonlight sail down the Delaware. Steadily plugging along we had Bristol abeam at 4.35, Burlington 4.45, Beverly 5.20, Philadelphia 8.30.

There is almost as much traffic on the water front at Philadelphia as at New York; but as the Delaware is much wider than the East River there is not so much congestion. Large ferries, brilliantly illuminated, were continually going back and forth to Camden, N. J. Many large sailing vessels from foreign countries were anchored in midstream.

Passed League Island Navy Yard at 9.45. The docks seemed well filled with large battleships and other vessels of the Navy. By closely studying the chart we experienced no trouble in navigating the river. Everything essential is plainly marked, and the merest tyro can follow the course without difficulty.

At 10.20 when only a few miles from our destination, one of the worst fog banks we ever experienced settled down upon us. Two steamers were close at hand, though not a thing could be seen. They blew their whistles and we responded. They must have anchored almost at once as their whistling ceased, and only their bells could be heard. We drew in shore to avoid collision and kept watch. Suddenly a large scow loomed up ahead. Just cleared it by throwing the wheel hard over.

At 10.45 we anchored close to Tinicum Island in less than one fathom of water. I have seen easier things than sailing through strange waters at night in a thick fog with a couple of steamers on one hand and an island on the other. That was the time to anchor. Before turning in we mugged up on good hot coffee, and then slept as soundly as though we were safe on our own home moorings.

Next morning, turned out at six o'clock, found it still foggy, though not so thick as the night before. Getting underway we passed inside of Tinicum Island, and after a short run arrived at the Riverside Yacht Club, and tied astern of Thelma II at 6.45; receiving a warm welcome from the commodore's son, Herbert, formerly of New Bedford, but now cashier of the John Hancock office in Chester. Breakfast was announced, and the crew being in a condition to do it justice, fell to with alacrity. Though it was damp and foggy outside, the cabin was warm and comfortable, thanks to the reliable little coal stove. This meal was enjoyed by all and a surprising quantity of grub, washed down by copious drafts of the aforesaid brew, put us all in the best of spirits. We were certainly a good natured crowd, and had our better halves been handy, they could have gotten the price of a winter's outfit for the asking? We felt like loafing this morning, as the previous day had been exceedingly strenuous. First: the breaking of the pump, requiring a half day's labor, and then the night's run in the fog had left us somewhat tired.

Though we were scheduled to be at Chesapeake City that afternoon, there was no need of hurrying as it was only a forty-five-mile run, and our confidence in the Doman left us no cause for worry.

Mr. Jones, Jr., having forgotten to leave the safe key at the office had to take a trolley to Chester. Before starting he made us promise we would pick him up at that place. Getting into his tender, he landed at the float of the Riverside Yacht Club, of which he is a member, and, setting his long legs in rapid motion, quickly disappeared Chesterward.

Soon after leaving Chester the fog lifted, and the sun com-

ing out warm, gave us a regular summer day. Good time was made down the river, thanks to a fair two-knot tide under us. The engine had to do the pushing, as the wind was dead ahead and blowing fresh. The log says that captain painted the engine and the stove. The former needed it as all the enamel had been burnt off when the pump went out of commission.

Passed Wilmington 11.10, Newcastle 11.53, arrived at Delaware City 12.40. We had to wait a short time as a loaded barge was locking through and two empty ones were waiting. The commodore negotiated the toll fee, and having secured the permit, got the opportunity along with it of locking through with the next barge. Entered lock 1.15. Cleared 1.30. In this waterway the speed limit is 4½ miles per hour, and this must not be exceeded. Many boats have been fined for overrunning. Safety First for us, so we checked the time between mile-stones.

The run through this canal will linger long in our memories. The bugs from up Philadelphia way call this God's country, and so it is, the quiet waters, green fields, beautiful sunshine, well, it was good to look at. If Heaven is half as beautiful as some of the places we passed through, it will be some place. Words fail to describe the scenery. These things are worth living for. Traveling at a slow speed gave us time to enjoy it all.

Soon after leaving the dock, the captain announced that dinner was ready. One of the greatest pleasures of boating is that we are always ready for the "eats". The plainest of food tastes better than the swellest meal one could get at a city restaurant.

Cruising days are happy days. Mr. Reader, if you are tired and feel blue, if your bones ache, and your brain is fagged, take a cruise of a week or more in a motor boat. If you don't own one, buy one. If you can't buy, hire. If you can't hire, beg a friend to take you along. Don't hurry. Just loaf along. Your condition will soon undergo a complete change. There's a reason. Try it.

Passing through the lock at 4.40 and finding the gas tank nearly empty, 25 gallons of the precious fluid was taken in. The commodore and his son now regretfully departed as Herbert was compelled to be at his desk in Chester the next day. The parson and the S. M. were to sleep on board that night and leave the next morning for New Bedford. The captain and mascot were to go on some hundred miles farther with Mr. Spear completing the voyage.

After supper all went ashore and the previous performance (telegrams, post-cards, and ice-cream parlors) was gone through with. Tired but happy we returned to the Safety and sought our bunks.

Next morning, October 7, we were up early to speed the parting guests. The parson and S. M. had to get away on an early train. After seeing them off we got under way and headed for Chesapeake via Back Creek and Elk River. Started 8.15, the day was perfect, sun shining brightly, not a breath of air stirring. Mr. Spear, whom we picked up at Chesapeake City, being well acquainted with these waters, did the navigating. Turkey Point abeam 10.05, Grove Point 10.35, Worton's Point 12.00, Poole's Island 12.56, Love Point Light, entrance to Chester River, 3.45. Mr. Spear lives in Millington, fifty miles up this river. We had it calm all the way.

The waters of the Chesapeake afford one of the best cruising grounds in the world. In the book of cruises written by the Barries of Philadelphia, it is described as a veritable paradise for motor boats. The chart shows a body of water some 200 miles long, with both shores indented by bays, harbors, creeks, and large rivers all the way from the head to the mouth. The commodore and his son are planning to explore this bay next summer in Thelma II, and the writer hopes to do the same in the near future.

We anchored below Chestertown at 8.30. It was a beautiful moonlight night. A proper ending for a perfect day. After partaking of a hearty supper we settled back without a care or a worry.

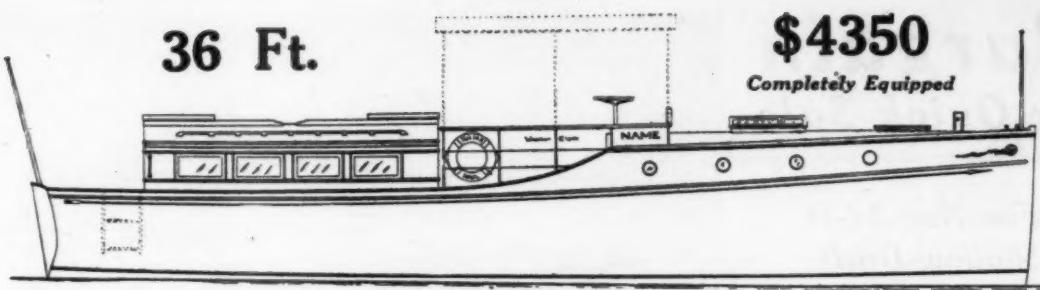
The mascot and James who is about eleven years old had become great friends on the run, due to the fact, no doubt, that he purchased a big chunk of fresh meat at Chesapeake City which kitty devoured with great relish. She had become a very good sailor, and seemed to enjoy being aboard very much.

Next morning, October 8, slept till 8 o'clock. After breakfast, weighed anchor and ran up to Chestertown where we remained for a couple of hours.

At eleven o'clock we cast clear and headed up the river for Millington, on the last leg of the journey. The river seemed without end. We sailed up and up until the banks almost met, and still we sailed. As all things must have an end, we came at last to the end of this trip.

36 Ft.

\$4350

Completely Equipped

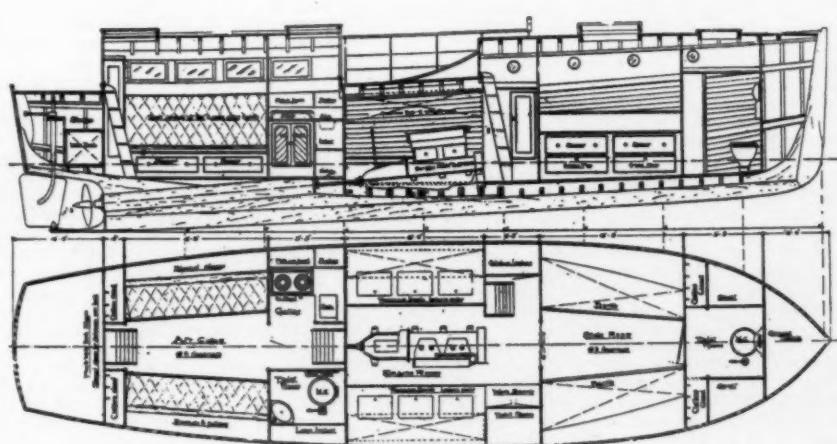
The BURGER Standardized Bridge-Deck Cruiser

A BIG roomy cruiser of the latest popular bridge-deck, double-cabin type. It's just the kind of a boat you've long thought you'd like to have built, but now you can buy it from us at a big saving in cost.

Designed by Chas. D. Mower, the celebrated Naval Architect of New York City. Built with the most approved construction, workmanship and materials, and backed by our experience of thirty years building high grade boats.

Study the plans: Note the engine room with full headroom at the forward end; the two roomy cabins, each with a separate toilet room; the fully equipped galley. The price includes complete high grade cruising equipment. Scripps Model D, 4-cylinder, 4-cycle motor, electric starting and lighting system.

Standardized quantity production saves several hundred dollars per boat. We have ten of these boats now under construction. First deliveries about June 1st.



PRICE

\$4350

F. O. B. Cars or in the water
Manitowoc.Complete except linen and
mess gear.Deliveries begin about
June 1stWrite today for com-
plete specifications.Burger Boat Co.
Manitowoc Wisconsin

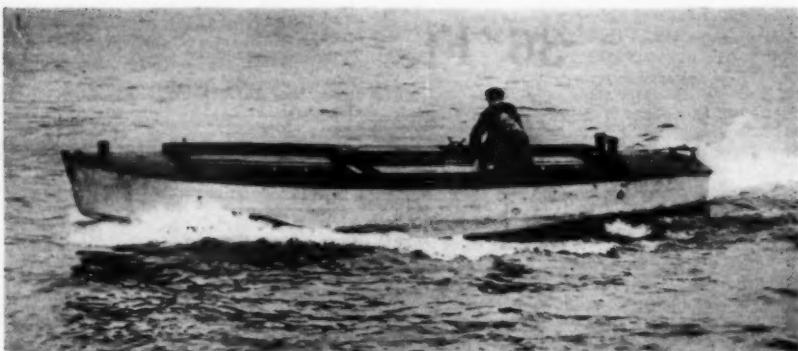
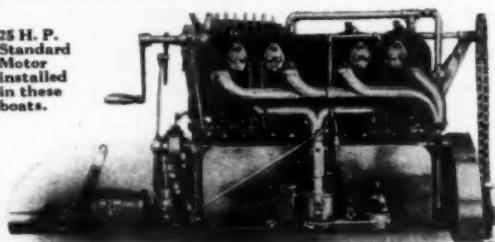
Bargain for Quick Sale

Five New 24-ft. Shallow-Draft Boats with Standard Motors

Here is your chance to buy a brand new motor boat for \$1300 (including motor), which would cost at least \$3500 to build today. Originally intended for government use, the termination of the war made them available for private buyers. Not built to sell so nothing has been spared to make them the finest boats of their type that can be built.

After thorough examination and test a number of these boats were purchased by the State of New York, engineer's department, and are now giving perfect service and satisfaction in constant daily service.

25 H. P.
Standard
Motor
Installed
in these
boats.



24' x 6'5" x 15" draft. Depth 2'6". Tunnel stern. Speed 8 miles. 25 H.P. motor

These boats are excellent for either pleasure or commercial use on all inland and coastwise waters. The construction is unusually strong, built of heavy U. S. N. destroyer type galvanized steel, officially tested to be shell-proof therefore impossible to puncture hull in hardest service. Divided by bulkheads into four watertight compartments insuring absolute safety.

Propellers are protected by tunneled stern so that they cannot be damaged by floating logs, snags or rocks. The hull is equipped with skids for protection when it is actually scraping bottom. Floor is $\frac{3}{4}$ " cedar, over oak beams. Two 30-gallon copper fuel tanks, partitioned for gasoline and kerosene, enclosed in oak lockers. Salt water equipment throughout.

Powered with 25 H. P. Four Cylinder, Four Cycle Standard Motors
manufactured by the Standard Motor Construction Co., Jersey City, N. J. The use of genuine new Standard Motors in these boats is typical of their high quality throughout. Engines never run except in official tests. Specially equipped to burn either kerosene or gasoline. Rear starter, Dixie Magneto together with battery ignition, sight feed lubricator, reverse gear, etc. Motors alone are worth more than price quoted for entire outfit.

Ready for immediate delivery Price f.o.b. New York \$1300 each
Wire or write immediately

Box "D", care of MoToR BoatinG
119 WEST 40th STREET NEW YORK CITY

Yard and Shop

(Continued from page 56)

Announcement to Yachtsmen

An organization to be known as "The Yacht Brokers Association," composed of the undersigned firms established in the business of yacht brokerage, has been formed for the following purposes:

First, to generally encourage a greater interest in the sport of yachting; Second, to render more efficient service to yachtsmen and co-operate more closely with those interested in the sport; Third, to protect and further the interests of those legitimately engaged in the yacht brokerage business; Fourth, to adopt a common system for registering competent and reliable officers and crews for the benefit of yacht owners in general.

We believe that the majority of yachtsmen who have conducted business with yacht brokerage firms fully appreciate the services rendered by them, but we fear that there are a number of those who have been or are still connected with the sport who, to a certain extent, are not aware of the asset which our calling has been and will be to yacht owners, and who probably have never stopped to consider the difficulties which they would encounter were they obliged to depend upon their direct efforts to sell or charter their yachts, involving considerable loss of time in addition to advertising expense, etc.

The constant activity of yacht brokerage firms unquestionably develops material advantages to the yachting fraternity in that it tends to create a market for owners who desire to dispose of or charter their vessels and to establish reasonable and to

some extent a standard value for their property.

Tams, Lemoine & Crane; Henry J. Gielow; William Gardner & Co.; Harry W. Sanford; John G. Alden; G. W. Ford Yacht Agency; Edward P. Farley Co.; Simon Fisch; Hollis Burgess Yacht Agency; Cox & Stevens; Frank Bowne Jones; H. H. Jennings Co.; Yacht Brokerage Dept., Consolidated S. B. Corp.; C. D. Mower; Seabury & De Zafra; Strong & Beekman; Linton Rigg Yacht Agency.

Executive Committee:

THOMAS C. LANDI (of Cox & Stevens).
Chairman.

CHARLES KING (of Tams, Lemoine & Crane),
W. P. KIGGINS (of Henry J. Gielow),
H. H. JENNINGS (of H. H. Jennings Co.),
FRANK BOWNE JONES,
Secretary-Treasurer.

Rajah Spark Plugs

Among the numerous special features which cause the Rajah Spark Plug to shine out above many others is the clip connection for attaching the wires. This clip is far ahead of all other connecting devices. The patent knife edge bushing was a big advance when it was brought out. This insures an absolutely tight joint between the porcelain core and the steel shell. Instead of bending their efforts to turn out large quantities of spark plugs the Rajah company devoted its energy to breaking a smaller quantity of higher grade. Materials used are the finest and the workmanship is as nearly perfect as it is possible to be. When properly handled a set of Rajah plugs will last as long as

the engine in which they are installed. Many prominent manufacturers of high grade marine engines have adopted Rajah plugs as standard equipment.

Champion Craft Going to Peru

'N'Everthin and We-We, the two Hacker-built, Hall-Scott powered displacement runabouts which finished first and second respectively, in the recent Southern displacement championship races at Miami, Florida, have been purchased by Mr. E. H. Ballard of the Curtiss Aeroplane & Motor Corporation, and sold by Mr. C. W. Webster, the South America representative of that company, to the Peruvian Government for fast despatch service in Peruvian waters.

It is extremely interesting to note how well informed this South American government must be in motor boating affairs, that they have thus purchased two of our very best and most successful high-speed runabouts. Certain it is, that in 'N'Everthin, they have a boat which in her meteoric career has established records for speed and consistency unequalled in displacement boat history.

We-We, formerly owned by Webb Jay of Chicago, was the first boat turned out by the Hacker Boat Company in 1920, and the Southern Championship Race at Miami was her first appearance in competition. We-We was also powered with a six-cylinder 200 h.p. Hall-Scott marine engine, and is a practical duplicate of the 'N'Everthin, being a standardized Hacker-craft 29-footer.



The First J. V. B. Engine Installation

Mr. H. J. Jaeger of Weehawken, N. J., and Miami, Fla., made the first J. V. B. Engine installation. Early last March he installed a medium duty 28-38 H.P. J.V.B. engine in his cruiser "Iris II," a heavily constructed 40' x 9' 6" x 3' 6" boat previously owned by Com. Matthew McCarty of the Albany Yacht Club.

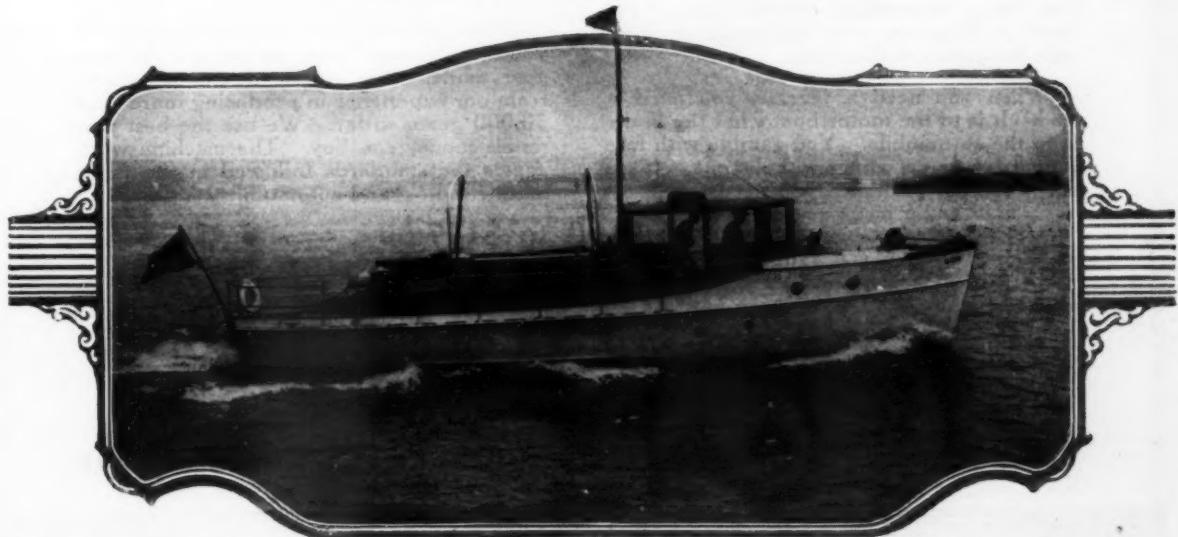
He used the boat in Florida waters during March and April, then brought it up under its own power to New York and has since used it continuously in New York waters. The motor gives the boat a speed of 9 M.P.H. and has given a consistent, dependable and efficient account of itself from the first day it was put to work.

The special sliding gear transmission type of reverse gear, characteristic of the J.V.B. engine, more than came up to its designer's expectations. Mr. Jaeger says that it is the biggest improvement yet made in marine engine equipment.

This is but ONE instance of the highly successful manner in which J.V.B. Engines are working out in actual service. Write or wire for details as to how this engine will make YOUR boat a better and a faster boat.

Price—\$1250.00—F. O. B. Cleveland, Ohio

The J. V. B. Engine Company
5912 Central Avenue - Cleveland, Ohio



When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating



STANDARD REVERSE GEAR

The Pride of the Fleet

There's real satisfaction in owning a boat your fellow club members are proud to hail—a trim, well kept hull, a good engine and a dependable reverse gear.

Last, but far from least, is that specification for a dependable reverse gear. No boat is complete, well equipped, or even safe to operate without one.

When you need a reverse, you need it bad. It is to the motor boat what the brake is to the automobile. You gamble with fate if you try to get along without one. It's a form of boat insurance you need.

The Standard Reverse Gear is as dependable a gear as you ever hoped to own. It is strong, compact, trouble proof, absolutely quiet and clean. Completely enclosed, and runs in a bath of oil, so that wear is practically negligible.

If you could see how the standard is built you'd understand why we say it's the best gear made. The simple design is refined from our experience in producing more than 30,000 gears so far. We use the best materials money can buy. The machine work equals the standards followed in the finest marine motors and automobiles.

Prices \$42.00 to \$147.00

including Ball Bearing Thrust Collar and Coupling. Immediate shipment from stock on all size gears. Write today for new Catalog.

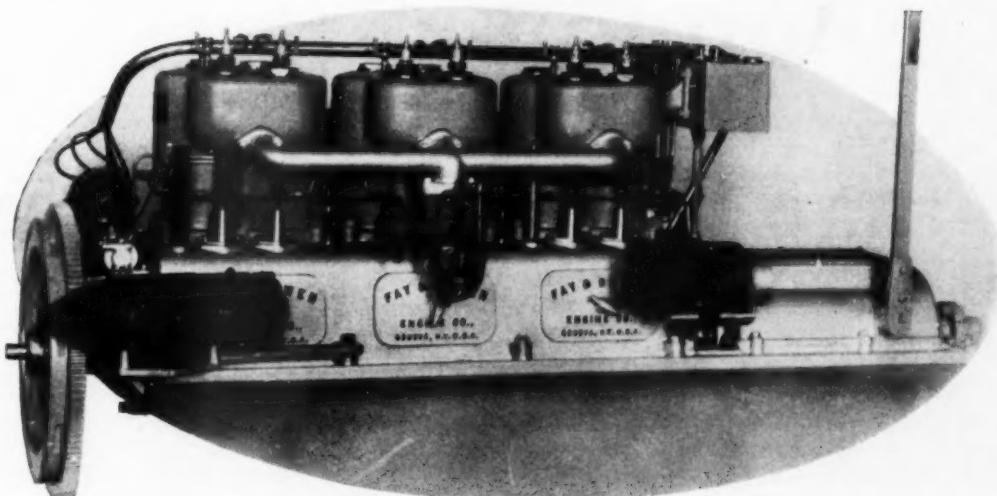
**S T A N D A R D
G E A R C O M P A N Y**

700 Commonwealth Avenue

Detroit, Michigan

FAY & BOWEN ENGINES

*The Product of 19 Years of
Practical Experience*



Model L-64 6-Cyl. 5 x 6 $\frac{1}{4}$
With Electric Starter

FAY & BOWEN ENGINE COMPANY
104 Lake Street, Geneva, N. Y., U. S. A.

NEW YORK: 44 Third Ave. at 10th St., Sutter Bros., Representatives.
PHILADELPHIA: 116 Walnut St., Marine Equipment & Supply Co., Representatives.
BOSTON: 100 Atlantic Ave., C. B. Hamblen & Co., Representatives.
CANADA: Brockville, Ont., St. Lawrence Engine Co., Representatives.

MOTOR BoatinG Advertising Index

A

A. C. Electrical Mfg. Co.	73
Ajax Auto & Aero Sheet Metal Co., Inc.	70
Albany Boat Corp.	85
Aluminum Brazing Solder Co.	66
American Bosch Magneto Corp.	72
American Balsa Co.	5
Anderson Engine Co.	54
Arrow Motor Machine Co.	70
Art Metal Works.	54
Astoria Mahogany Co.	102
Atlantic-Pacific Mfg. Co.	54

B

Barker Factory Co., The.	72
Bissell Varnish Co., The.	64
Blood Bros. Machine Co.	66
Bowes, T. D.	54
Boyce-Veeder Corp.	91
Brooklyn Varnish Co.	68
Brooks Mfg. Co.	66
Bruno, Kimball & Co., Inc.	84
Buffalo Gasoline Motor Co.	1
Burger Boat Co.	113

C

Caillé Perfection Motor Co.	66
Caldwell, J. E.	94
Cape Cod Power Dory Co.	62
Carlisle & Finch Co., The.	80
Carlyle Johnson Machine Co.	69
Carpenter & Co., Geo. B.	78
Central Mfg. Co.	62
Champion Spark Plug Co.	96
Chase Co., L. C.	72
Classified Advertisements	51-52-53
Clay Engine Mfg. Co.	120
Coe Wrench Co.	57
Columbian Bronze Corp.	2
Commonwealth Motors Co.	62
Consolidated Shipbuilding Corp.	49-55
Cory & Sons, Chas.	65
Cox & Stevens.	44-54
Crane Co.	66-87
Cutting & Washington Radio Corp.	66

D

Delco-Light Co.	68
Devore & Reynolds Co., Inc.	62
Doman Co., H. C.	81
Dunn Motor Works.	72
Du Pont de Nemours & Co., E. I.	62
Du Pont Motors, Inc.	68
Durkee & Co., Inc., Chas. D.	64

E

Elco Co.	2nd Cover
Electric Service Supplies Co.	60
Erickson & Co., Hubbard H.	66
Ericsson Mfg. Co.	64
Evinrude Motor Co.	82

F

Farley Co., Edward P.	48
Fay & Bowen Engine Co.	48
Ferdinand & Co., L. W.	81
Flash-O-Light Corp.	88
Freeport Engine Co.	68
Frisbie Motor Co.	107

G

Gardner & Co., Wm.	47
Gibbs Gas Engine Co.	111
Gielow, Henry J.	45
Gies Gear Co.	62
Gill & Sons Forge & Mach. Wks., P. H.	74
Gordon Propeller & Mfg. Co.	60
Gray Motor Co.	97
Gray & Prior Machine Co.	67
Gray-Aldrich Co.	78
Great Lakes Boat Building Corp.	8

H

Hacker Boat Co., John L.	63
Hall-Scott Motor Car Co.	95
Hall Co., W. S.	62
Hamblen & Co., C. B.	60
Hamilton & Hansell, Inc.	74
Hamilton Marine Eng. Exchange, Inc.	52
Hand, Jr., Wm. H.	82
Hess Motor Co.	64
Hyde Windlass Co.	99

I

International Shipbuilding Corp.	67
----------------------------------	----

J

J. V. B. Engine Co.	115
Janney Steinmetz & Co.	80
Jennings Co., H. H.	50
Jones, Frank Bowne.	50
Jordan Bros. Lumber Co.	54

K

Kermath Mfg. Co.	101
Knox Motors Association.	67
Koban Mfg. Co.	67
Koven & Bro., L. O.	66

L

Laughlin Co., The Thos.	54
Lawrence & Co., L.	73
Lockwood-Ash Motor Co.	79
Lobe Pump & Machinery Co.	54
Lord, Frederick K.	54
Luders Marine Construction Co.	75
Lunkenheimer Co., The.	54

M

McClelland & Co., N. E., Ltd.	54
Malone Hardware Co.	83
Marine Compass Co.	62
Massasoit Mfg. Co.	69
Masten Co., Inc., G. H.	77
Mathis Yacht Building Co.	108
Mianus Motor Works.	74
Michigan Wheel Co.	70
Miller Engine Co.	62
Moto Meter Co., Inc., The.	77
Mower, Chas. D.	54
Mullins Body Corp.	70
Murray & Tregurtha Corp.	71

N

National Life Preserver Co.	60
Naval Architects & Yacht Brokers.	54
New Jersey Motor Sales Co.	70
New London Ship & Engine Co.	109
New Proces Chemical Co.	68
New York Lubricating Oil Co.	89
New York Yacht, Launch & Engine Co.	103
Niagara Motors Corp.	78
Nickerson, L.	68
Nilson Yacht Bldg. Co., Inc., The.	70
Nock, Frederick S.	54
Norma Co. of America.	7

O

Oakes & Dow Co.	66
Oberdorfer Brass Co., M. L.	71
Otto Metal Goods Corp., Wm. H.	60

P

Palmer Bros.	74
Paragon Gear Works.	3
Powell Co., The Wm.	76
Purdy Boat Works.	69

R

Racine Boat Co. (Racine)	64
Rajah Auto Supply Co.	61
Red Wing Motor Co.	69
Regal Gasoline Engine Co.	76
Richardson Boat Co.	68
Ritchie & Sons, E. S.	65
Rochester Boat Works, Inc.	65
Rock-A-Way Pump Co.	62
Roebling's Sons Co., John A.	62

S

Sanford, H. W.	51
Scripps Motor Co.	59
Sea Sled Co.	92-93
Seattle Standard Engine Mfg. Co.	62
Sherman, E. M.	54
Sinclair Refining Co.	62
Snow & Petrelli Mfg. Co.	105
Sonora Phonograph Co., Inc.	58
Southland Steamship Co.	64
Spark-o-Gap Co.	84
Standard Gear Co.	116
Standard Motor Construction Co.	2nd Cover
Standard Oil Co.	4
Stearns-McKay Mfg. Co.	64-80
Sterling Engine Co.	3rd Cover
Stewart Warner Corp.	62
Strong & Beckman.	54

T

Tams, Lemoine & Crane.	46
Tebo Yacht Basin Co.	4th Cover
Thompson Bros. Boat Mfg. Co.	60
Tiebout, W. & J.	76
Tillinghast Products Corp.	60
Topping Bros.	98
Trimount Rotary Power Co.	52

V

Valentine & Co.	43
Van Blerck Motor Co.	6

W

Watts, J. Murray.	54
Western Machinery Co.	119
Weston Electrical Instrument Co.	68
Wilcox, Crittenden & Co.	75-78
Willis Co., E. J.	80
Winton Engine Works.	110
Wireless Specialty Apparatus Co.	60
Wisconsin Motor Mfg. Co.	76
Woolsey Paint & Color Works.	65
World Battery Co.	62
Wolverine Motor Works.	60
Wyman-Gordon Co.	119

Y

Yale & Towne Mfg. Co.	70
Youngs & Bros., W. P.	62

Z

Zundel Co., Inc., R. W.	70
-------------------------	----

EFFICIENCY

The WYMAN-GORDON RECORD for efficiency can be read in the reorders of leading manufacturers; in the steady adherence of the most exacting customers year after year.

Our Engineering Department is at your service for the perfection of specially designed or unusually difficult forgings.

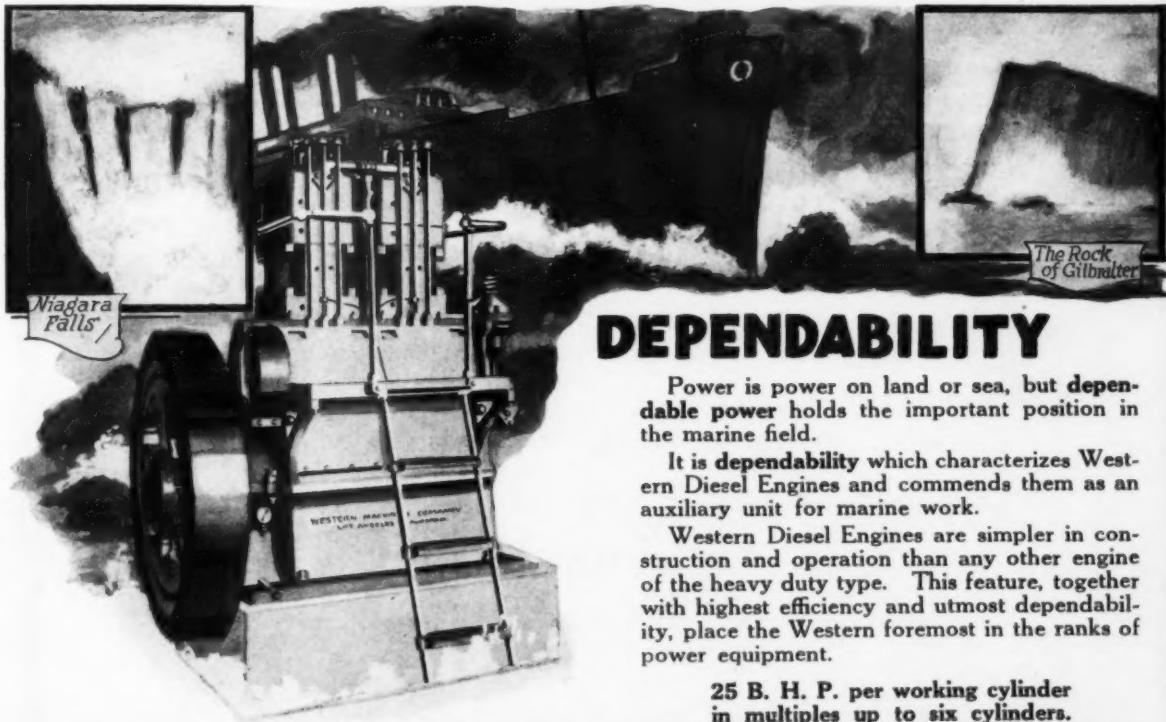
WYMAN-GORDON

The Crankshaft Makers

Worcester, Mass.

Cleveland, Ohio

Chicago, Ill.



DEPENDABILITY

Power is power on land or sea, but dependable power holds the important position in the marine field.

It is dependability which characterizes Western Diesel Engines and commends them as an auxiliary unit for marine work.

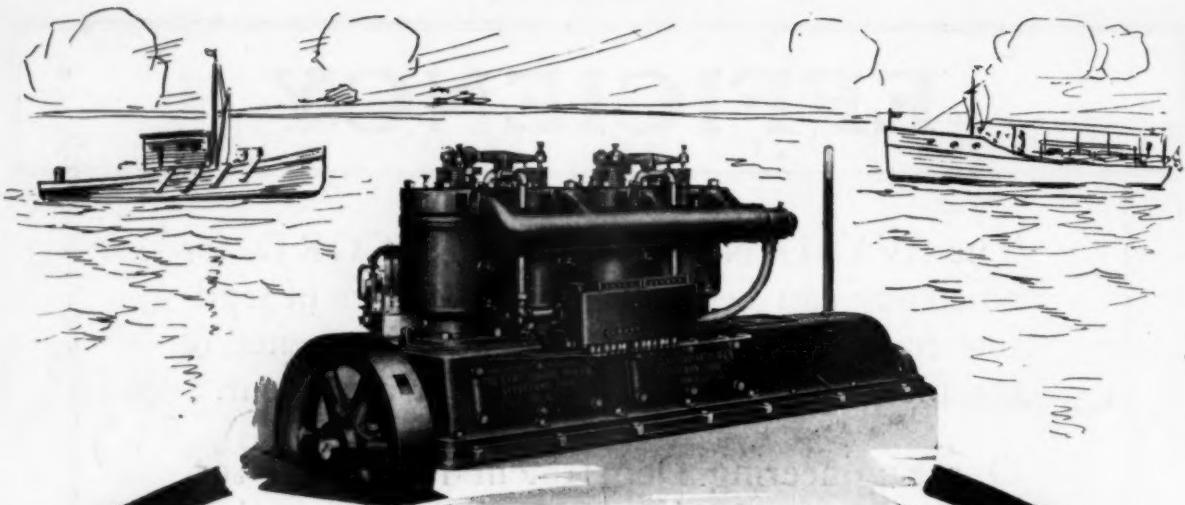
Western Diesel Engines are simpler in construction and operation than any other engine of the heavy duty type. This feature, together with highest efficiency and utmost dependability, place the Western foremost in the ranks of power equipment.

25 B. H. P. per working cylinder
in multiples up to six cylinders.

"WESTERN"

WESTERN MACHINERY COMPANY

General Offices and Factory:
928 No. Main Street, Los Angeles, Cal., U. S. A.
Branch: Rialto Bldg., San Francisco.



"Where There's Work to Be Done"

HONEST CLAY

The Engine for Heavy Boats

We are gratified to note a distinct trend toward engines of the Honest Clay class for motor yachts, cruisers and houseboats where comfort, accommodations and reliability are not abandoned in the pursuit of speed. It was a Clay powered cruiser which won the 1919 New York to Albany and return race of the New York Motor Boat Club.

Of course, there is no question that Honest Clay is the most satisfactory type of power plant for any kind of a working boat. It is a high grade, heavy duty four-cycle engine, substantially built, economical in fuel, easy to operate and absolutely dependable.

The nine sizes now supplied cover every heavy boat requirement. These are the latest standardized Honest Clays, known as Model "R".

Single Cylinder	6 H.P.	8 H.P.	10 H.P.
Two Cylinder	12 H.P.	16 H.P.	20 H.P.
Four Cylinder	25 H.P.	35 H.P.	50 H.P.

Write today for complete information and name of nearest agent.

THE CLAY ENGINE MFG. CO.

664 East 72nd Street

Cleveland, Ohio

view